

625.13
N484h
v. 12
pt. 2

NEW YORK STATE BRIDGE AND TUNNEL COMMISSION

AND

NEW JERSEY INTERSTATE BRIDGE AND TUNNEL COMMISSION



THE HOLLAND TUNNEL
CONTRACT NO. 12

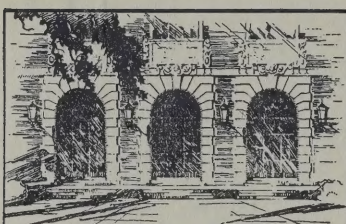
FANS, MOTORS, TRANSMISSION AND CONTROL

NEW YORK

NEW JERSEY

CONTRACT DRAWINGS 1 to 25

1925



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Ans.

NEW YORK STATE BRIDGE AND TUNNEL COMMISSION

AND

NEW JERSEY INTERSTATE BRIDGE AND TUNNEL COMMISSION



THE HOLLAND TUNNEL

CONTRACT NO. 12

FANS, MOTORS, TRANSMISSION AND CONTROL

NEW YORK

NEW JERSEY

CONTRACT DRAWINGS 1 to 25

1925

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NEW YORK STATE BRIDGE AND TUNNEL COMMISSION

AND

NEW JERSEY INTERSTATE BRIDGE AND TUNNEL COMMISSION

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E. MORGAN BARRADALE, Secretary

OLE SINGSTAD

Chief Engineer

25m49 g. A.C. Wieland

NEW YORK STATE BRIDGE AND TUNNEL COMMISSION

AND

NEW JERSEY INTERSTATE BRIDGE AND TUNNEL COMMISSION

NEW YORK STATE BRIDGE AND TUNNEL COMMISSION
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M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

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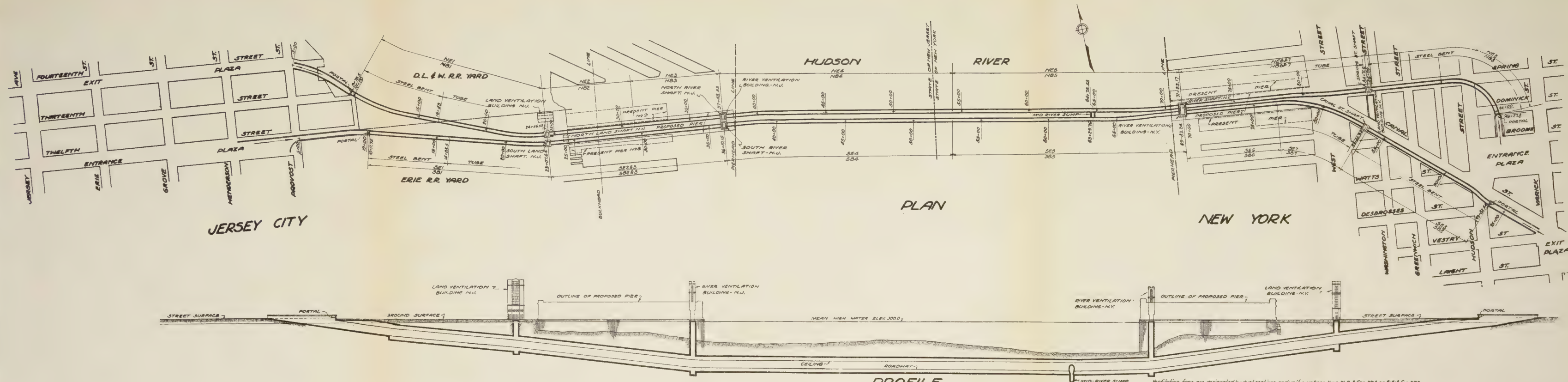
NEW YORK STATE BRIDGE AND TUNNEL COMMISSION
OFFICE OF THE COMMISSIONER

NEW YORK STATE BRIDGE AND TUNNEL COMMISSION
OFFICE OF THE COMMISSIONER

LIST OF CONTRACT DRAWINGS

Contract No. 12

1. Plan and Profile.
2. Land Ventilation Building, New York—1st Floor Plan.
3. Land Ventilation Building, New York—2nd Floor Plan.
4. Land Ventilation Building, New York—3rd Floor Plan.
5. Land Ventilation Building, New York—4th Floor Plan.
6. Land Ventilation Building, New York—Section DD, Upper Part.
7. Land Ventilation Building, New York—Section DD, Lower Part.
8. River Ventilation Building, New York—2nd Floor Plan.
9. River Ventilation Building, New York—3rd Floor Plan.
10. River Ventilation Building, New York—4th Floor Plan.
11. River Ventilation Building, New York—Roof Plan.
12. River Ventilation Building, New York—Section BB, North Half.
13. River Ventilation Building, New York—Section BB, South Half.
14. River Ventilation Building, New Jersey—2nd Floor Plan.
15. River Ventilation Building, New Jersey—3rd Floor Plan.
16. River Ventilation Building, New Jersey—4th Floor Plan.
17. River Ventilation Building, New Jersey—Roof Plan.
18. River Ventilation Building, New Jersey—Section AA, North Half.
19. River Ventilation Building, New Jersey—Section AA, South Half.
20. Land Ventilation Building, New Jersey—1st Floor Plan.
21. Land Ventilation Building, New Jersey—2nd Floor Plan.
22. Land Ventilation Building, New Jersey—3rd Floor Plan.
23. Land Ventilation Building, New Jersey—4th Floor Plan.
24. Land Ventilation Building, New Jersey—Section DD.
25. Land Ventilation Building, New Jersey—Section FF.



PROFILE

LAND VENTILATION BUILDING NEW YORK

Duct Section	System	Vol. in cu. ft. per fan	S.F. in sq. ft. of water	Fan No.	Floor	Dwg. No.
N 6 E 8	Blower	84,000	0.95	1	3	4
				2	3	4
N 6 E 8	Exhaust	87,500	0.80	2	1	5
				1	3	4
N 8	Blower	87,500	1.35	2	3	4
				3	3	4
N 8	Exhaust	90,500	1.15	1	1	2
				2	3	4
S 8	Blower	100,300	1.80	1	2	4
				2	2	4
S 8	Exhaust	104,300	1.00	2	2	4
				3	3	4
S 8	Blower	154,000	2.10	1	3	4
				3	3	4
S 8	Exhaust	160,000	2.00	2	1	3
				2	2	4
Transformer Air Blast Fans		10,000	4.00	1	4	4
				2	4	4

RIVER VENTILATION BUILDING NEW YORK

Duct Section	System	Vol in cfm	Vel ft/min	Pressure in. of water	Fan No	Floor	Ang
N.B.S	Blower	175,000	3.00		1	2	0
					2	4	0
					3	Roof	0
N.E.S	Exhaust	182,000	2.50		1	2	0
					2	4	0
					3	Roof	0
S.B.S	Blower	202,500	3.75		1	2	0
					2	4	0
					3	Roof	0
S.E.S	Exhaust	210,500	3.10		1	2	0
					2	4	0
					3	Roof	0
S.E.E	Blower	100,500	2.80		1	2	0
					2	4	0
					3	Roof	0
S.E.E	Exhaust	104,500	0.75		1	2	0
					2	4	0
					3	Roof	0

If the fans proposed to be furnished by the contractor have outlet areas different from those shown on the plans, then the total pressures shall be not less than the sum of the static pressures shown in the tabulation and the velocity pressures based on the fan outlet areas shown on the plans. In that case the static pressures shown in the tabulation shall be increased or decreased, as the case may be, to give the required total pressure.

RIVER VENTILATION BUILDING NEW JERSEY

Unit Section	System	Capacity per Fan	Span at Water	Fan No	Floor	Orig No
743	Blower	\$6,300	2.60	1	2	14
				2	3	15
				3	4	16
743	Exhaust	100,000	0.60	1	3	15
				2	4	16
744	Blower	\$92,500	2.60	1	2	14
				2	3	15
				3	4	16
1-E 2	Exhaust	200,000	2.60	1	3	15
				2	4	16
5B4	Blower	\$82,000	3.00	1	3	15
				2	4	16
				3	Roof	17
5E 4	Exhaust	150,000	2.50	1	3	15
				2	4	16

LAND VENTILATION BUILDING NEW JERSEY

Size Sector	System	100 cfm per fan	Ratio of water	Fan No	Floor	Drain
NB1	Blower	218,000	3.00	1	2	21
				5	4	25
NE1	Exhaust	227,000	3.00	1	1	20
				3	3	23
NB2	Blower	98,500	1.80	3	3	23
				5	4	25
NE2	Exhaust	100,000	0.70	3	3	23
				5	3	27
SB1	Blower	107,000	1.40	5	3	27
				5	4	25
SE1	Exhaust	111,000	1.00	1	1	20
				3	3	23
SB2#3	Blower	81,000	1.40	2	3	27
				3	4	25
SE2#3	Exhaust	84,500	0.55	2	1	21
				3	3	23
Transformer Air Blower Fans		10,000	4.0	6		26

Ventilation fans are designated by duct sections and unit numbers, thus N-8-8 Fan N#1 or S-E-8 Fan N#2
 N designates north tunnel, S designates south tunnel
 B = blower duct, E = exhaust duct
 # = duct section as shown on Dwg. N#1
 Fan number designates the number of the fan in the group of three, either blower or exhaust,
 connected to one duct section.
 All ventilation fans are chain driven, chains enclosed in airtight guards.
 Anchor bolts for fans and motors are to be furnished under this contract and set under another contract.
 Concrete pedestals for fans and motors will be furnished under another contract.
 All removable steel partitions will be furnished and erected under another contract after installation of fans

For plans and sections of land ventilation building, New York, see contract dwg. N#27 incl.
 For " " " of river ventilation building, " " " " 813 incl.
 For " " " New Jersey, " " " " 14-19 incl.
 For " " " land, " " " " 20-25 incl.

For detail of drain at bottom of the exhaust fans " " " " 14-16
 For method of anchoring the housing to concrete " " " " 7
 For " " " steel flue at top of exhaust fans to concrete see contract dwg. N#7

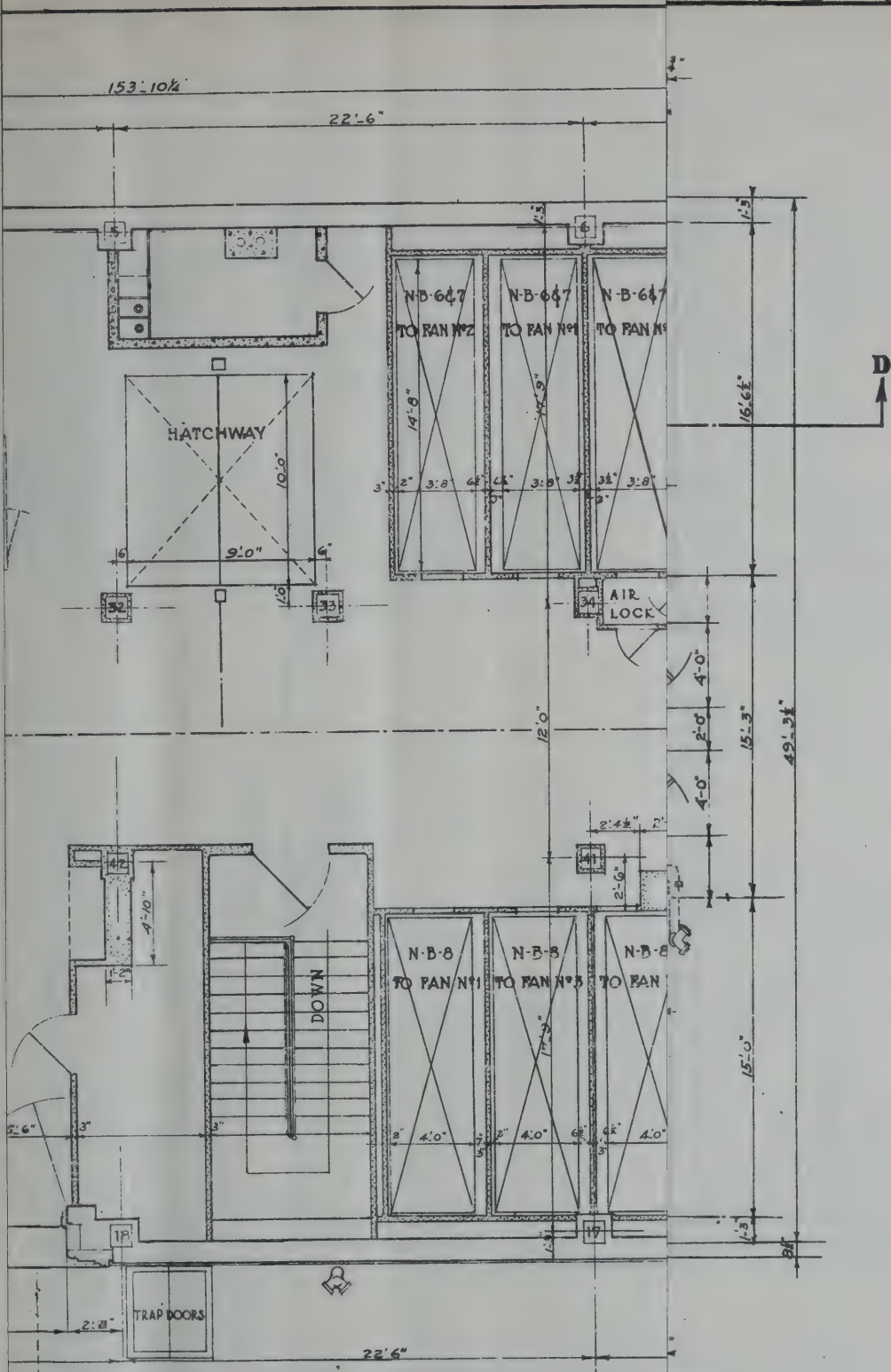
NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 1

DRAWN BY: DATE JULY 7 1925

CHIEF ENGINEER
Ole Singstad

DRAWN BY: *BUTM.*

M. B. Brown Printing & Binding



SPRING STREET

R PLAN

BUILDING N. Y.

WASHINGTON

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 2

SCALE: 0 1 2 3 4 FEET

DATE JULY 7, 1925

DRAWN BY *sum*
CHECKED BY *W. H. E.*

Ch. Singstad
CHIEF ENGINEER

FILE NO. 8-12

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



CANAL STREET

SPRING STREET

WASHINGTON STREET

FIRST FLOOR PLAN

LAND VENTILATION BUILDING N.Y.

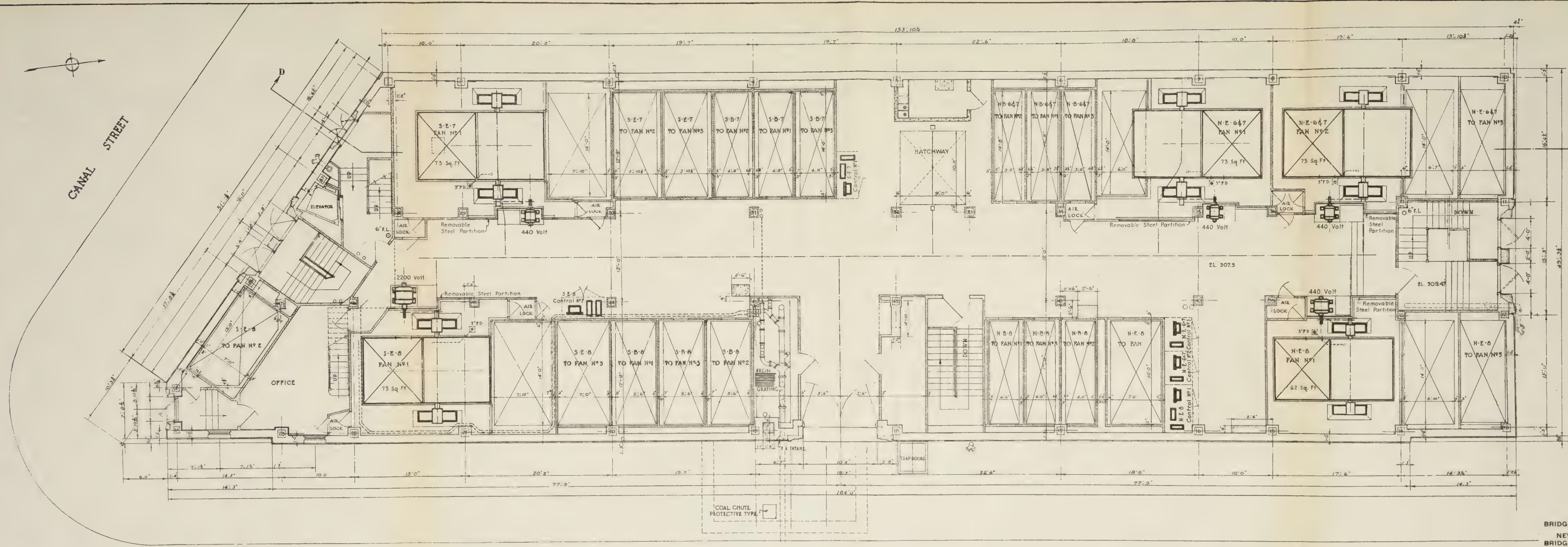
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BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 2

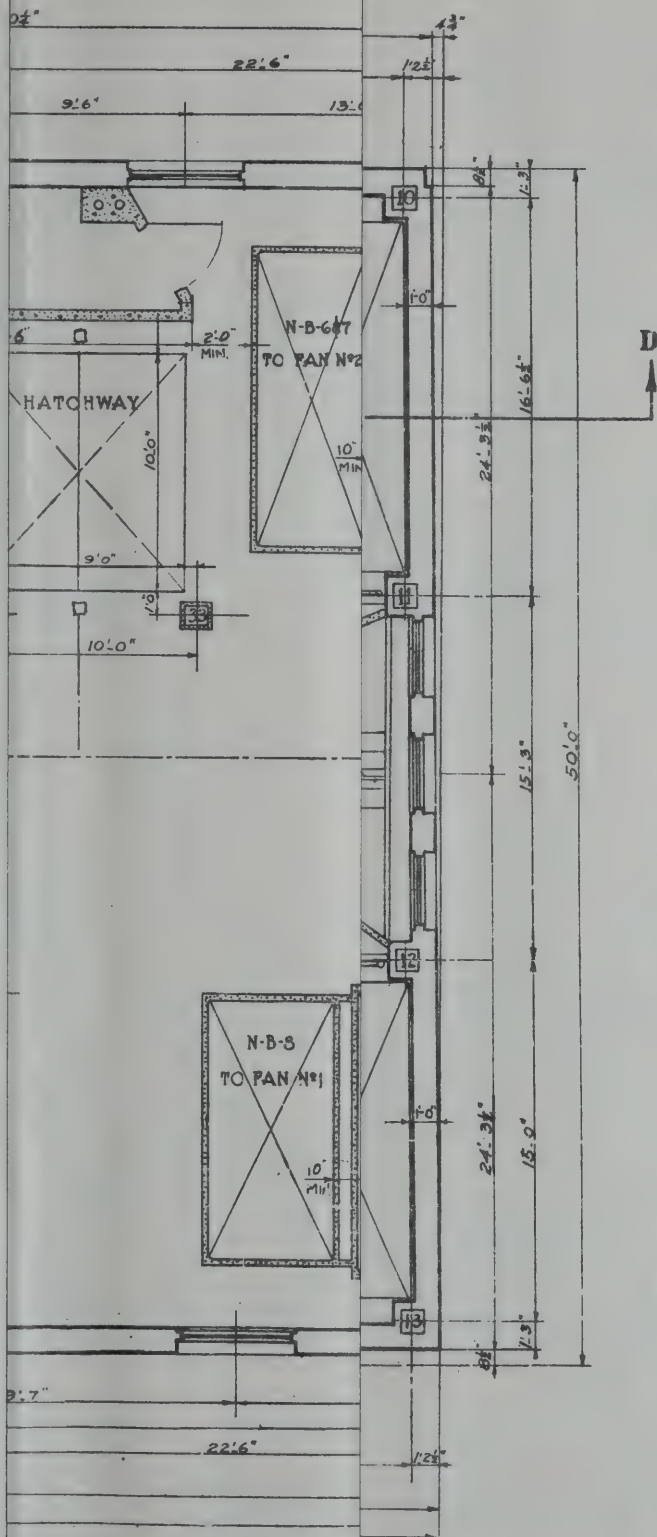
A. L. Willard
L. B. Stillwell
CONSULTANTS

SCALE: 1" = 10' - 0"
DATE: JULY 7, 1923
DRAWN BY: *W. H. Smith*
CHECKED BY: *W. H. Smith*
FILE NO. 12

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

W. H. Smith
MECHANICAL ENGINEER
W. H. Smith
ELECTRICAL ENGINEER





NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No 3

Willard
Stillwell } CONSULTANTS

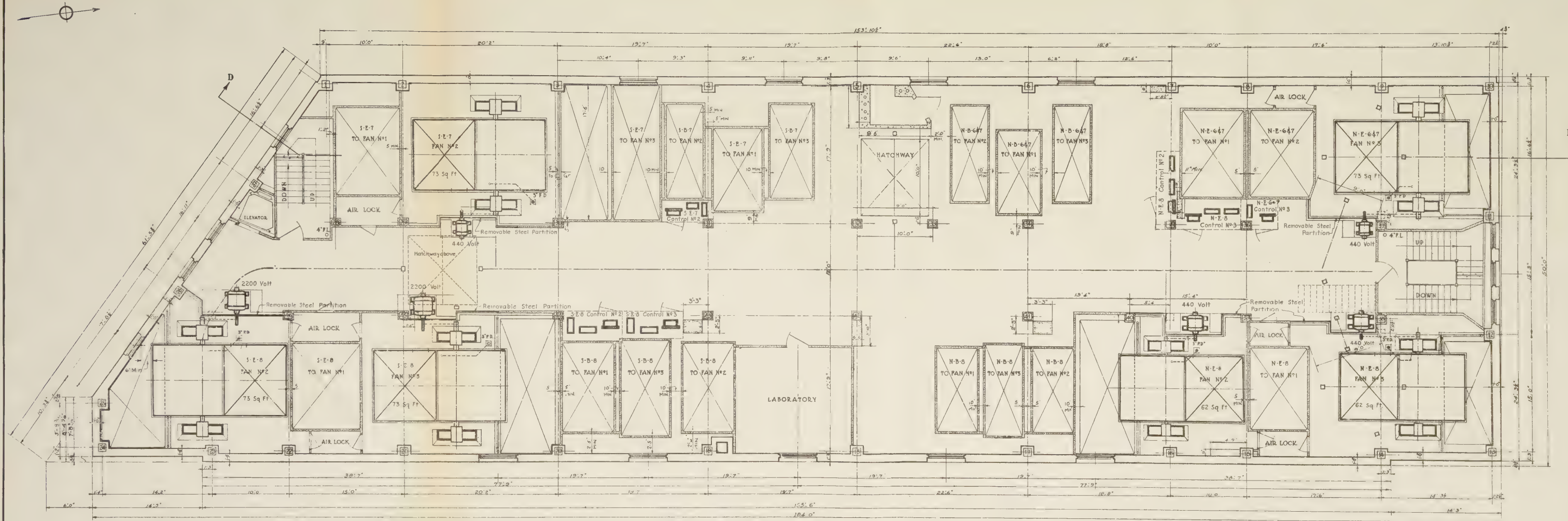
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DATE: JULY 7, 1925

DRAWN BY *G.W.M.*
CHECKED BY *H.C.*

Ol. Singstad
CHIEF ENGINEER
FILE NO. 1-12

ING N. Y.



SECOND FLOOR PLAN

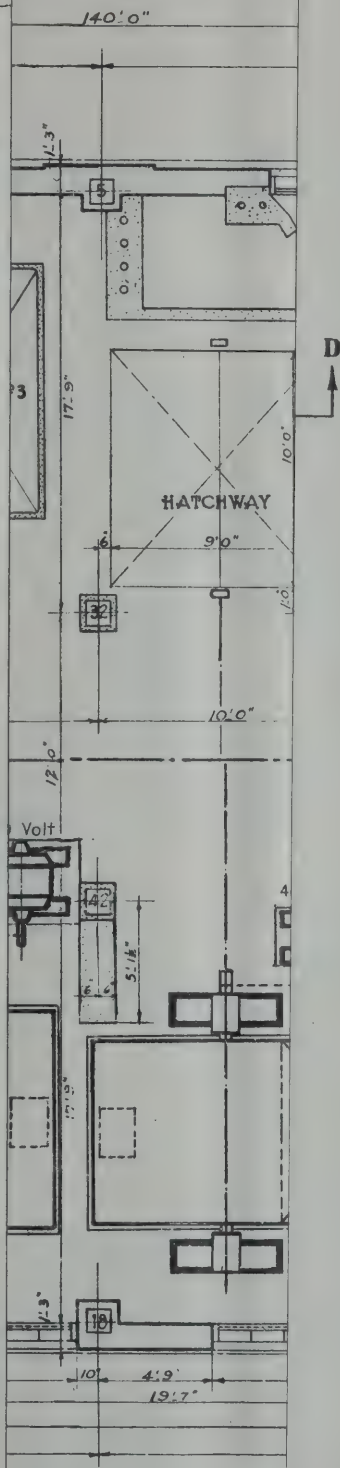
LAND VENTILATION BUILDING N.Y.

Robert Smith
MECHANICAL ENGINEER
A. N. Wood
ELECTRICAL ENGINEER
ENGINEER OF DESIGN

A. L. Willard
E. B. Stillwell CONSULTANTS

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 3

SCALE: 1" = 10' 0" FEET
DATE: JULY 7, 1915
DRAWN BY: *CHITTY*
CHECKED BY: *W. E.*
FILE NO.: 12-3



PLAN
BUILDING

Ralph
ENGINEER O

land
will } CONSULTANTS

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 4

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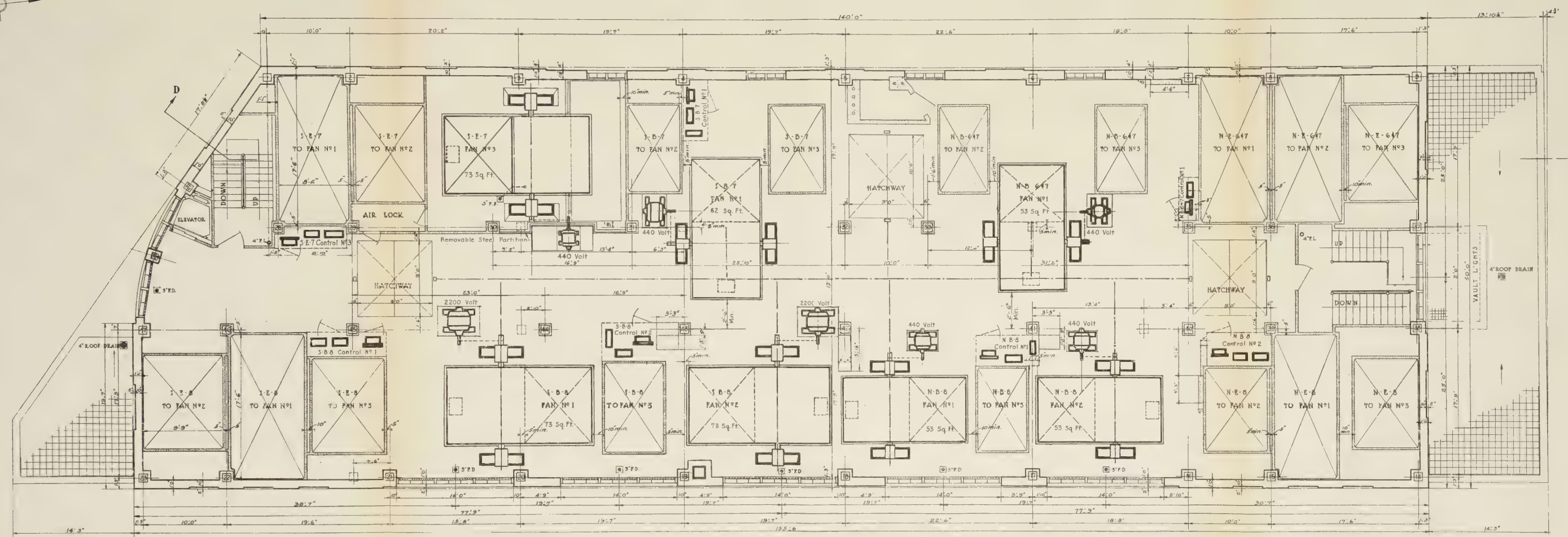
DATE JULY 7, 1925

DRAWN BY *cutm.*
CHECKED BY *K.C.*

Ch. Singstad
CHIEF ENGINEER

FILE NO 1-12

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



THIRD FLOOR PLAN

LAND VENTILATION BUILDING N. Y.

Albano
MECHANICAL ENGINEER
W. B. Stillwell
ELECTRICAL ENGINEER

A. C. Willard
W. B. Stillwell CONSULTANTS

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 4

SCALE 0 1 2 3 4 FEET DATE JULY 1, 1928
DRAWN BY *W. B. Stillwell* CHECKED BY *W. B. Stillwell* FILE NO. 1-12



CONSULTANTS

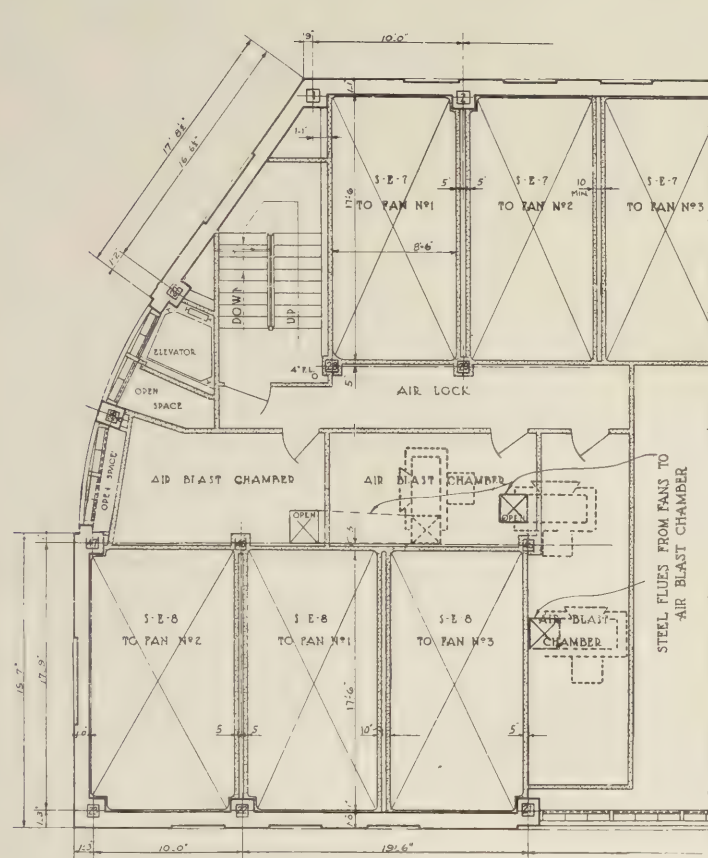
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DATE JULY 9, 1926

DRAWN BY *Sam.*
CHECKED BY *Kyle*

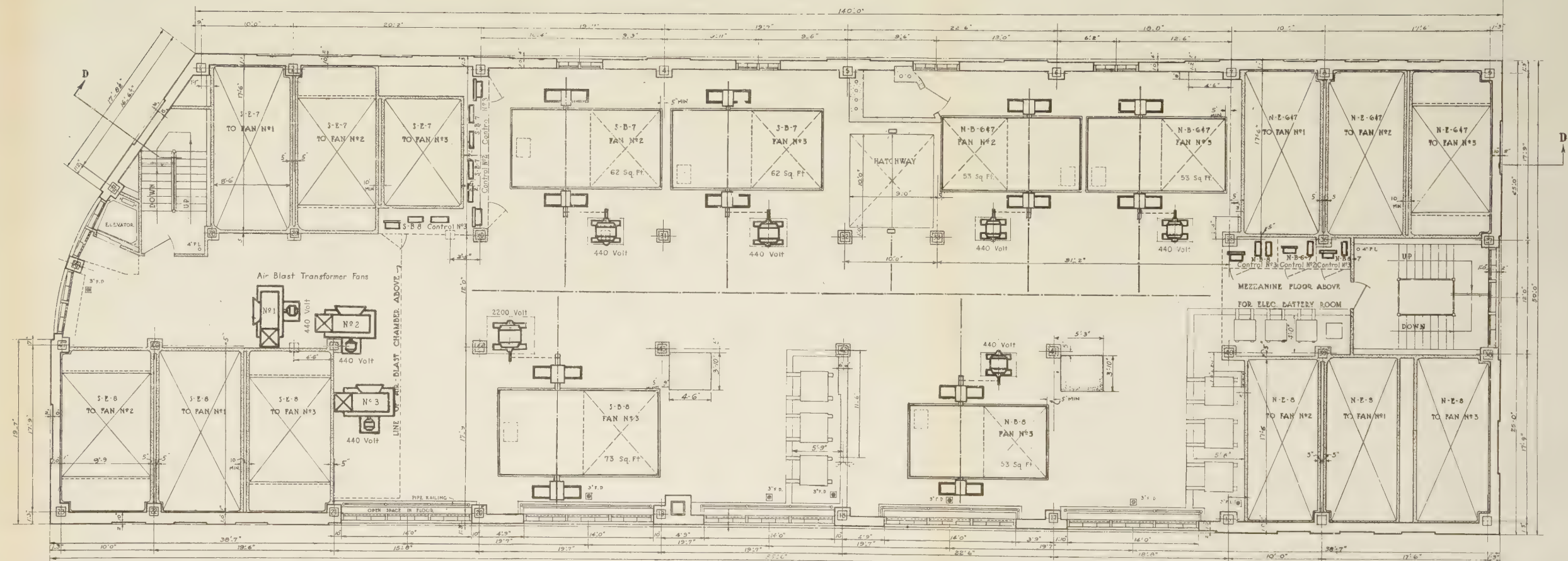
O. Singstad
CHIEF ENGINEER

FILE NO 1-12



PLAN SHOWING AIR-BLAST CHAMBER BETWEEN 4TH & 5TH FLOORS

Robert S. Smith
MECHANICAL ENGINEER
John D. Smith
ELECTRICAL ENGINEER
ENGINEERS OF DESIGN



FOURTH FLOOR PLAN

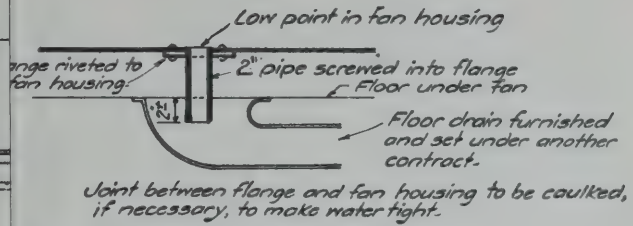
LAND VENTILATION BUILDING N.Y.

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT NO. 12
CONTRACT DRAWING NO. 5

A. C. Willard
G. B. Stillwell
CONSULTANTS

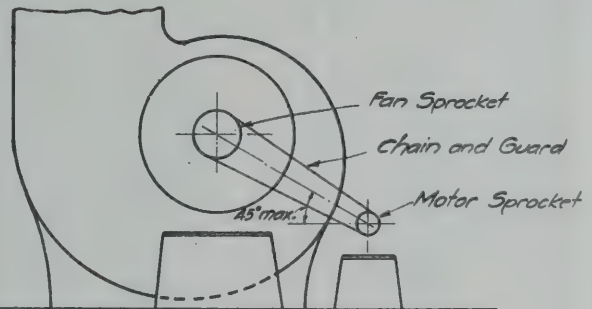
SCALE 1" = 10'-0" EAST DATE JULY 7, 1928

DESIGNED BY *W. C. Smith*
CHECKED BY *W. C. Smith*
Ch. Ingstad
FILE NO. 1-12

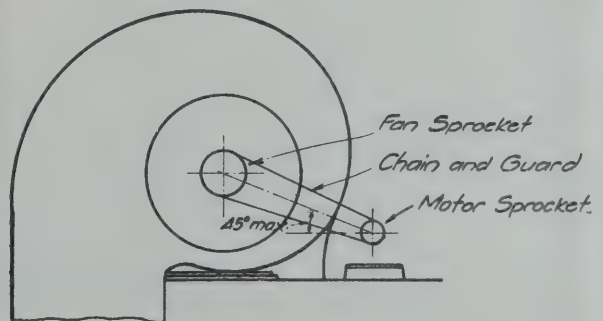


DETAIL OF DRAIN AT BOTTOM OF EXHAUST FANS

SCALE: 0 3 6 9 12 INCHES



TYPICAL DRIVE FOR EXHAUST FANS



TYPICAL DRIVE FOR BLOWER FANS

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 6

CONSULTANTS

SCALE: 0 1 2 3 4 5 FEET

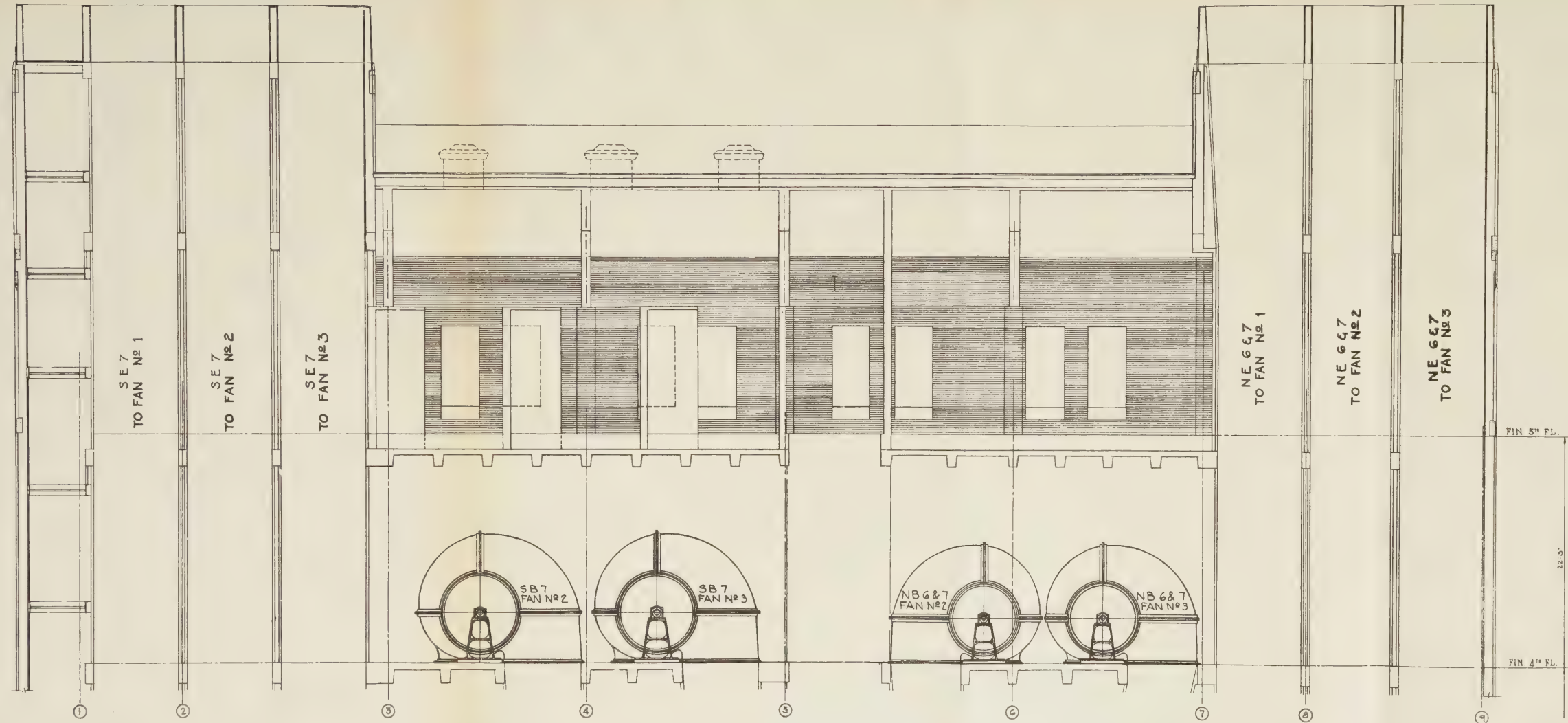
DATE JULY 7, 1925

DRAWN BY *sum.*
CHECKED BY *J.H.C.*

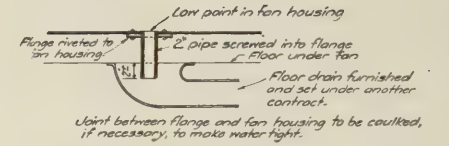
Ol. Sargent
CHIEF ENGINEER

FILE NO. 1-12

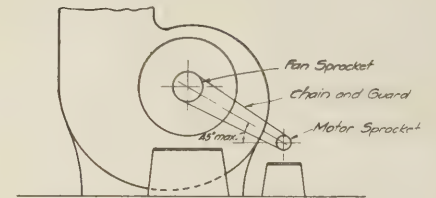
Ralph J.
ENGINEER OF



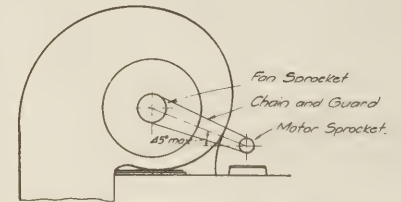
SECTION D-D UPPER PART
LAND VENTILATION BUILDING N.Y.



DETAIL OF DRAIN AT BOTTOM
OF EXHAUST FANS
SCALE: 0 3 6 9 12 INCHES



TYPICAL DRIVE FOR EXHAUST FANS



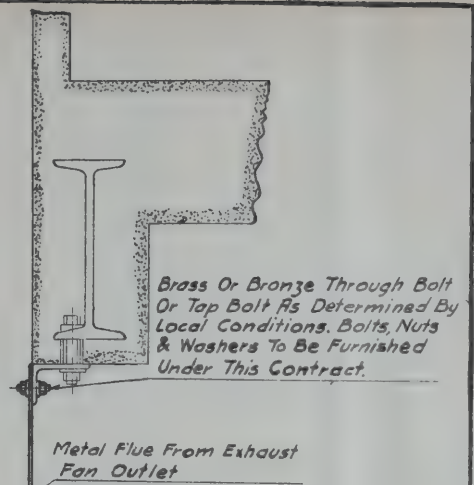
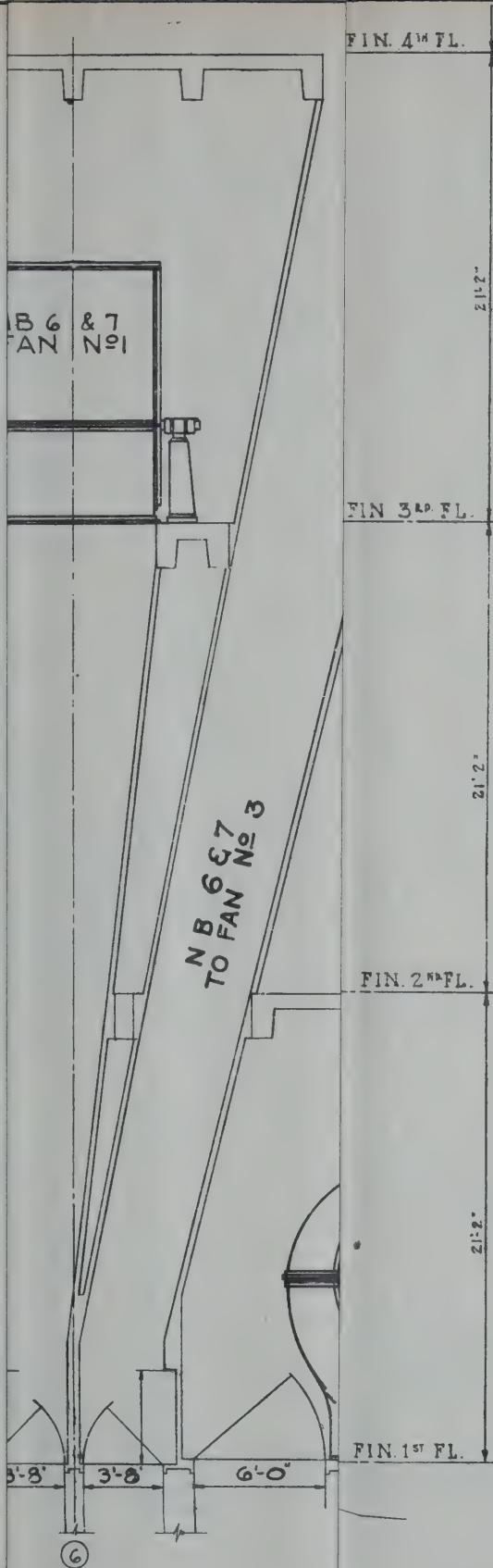
TYPICAL DRIVE FOR BLOWER FANS

NEW YORK STATE
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AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 6

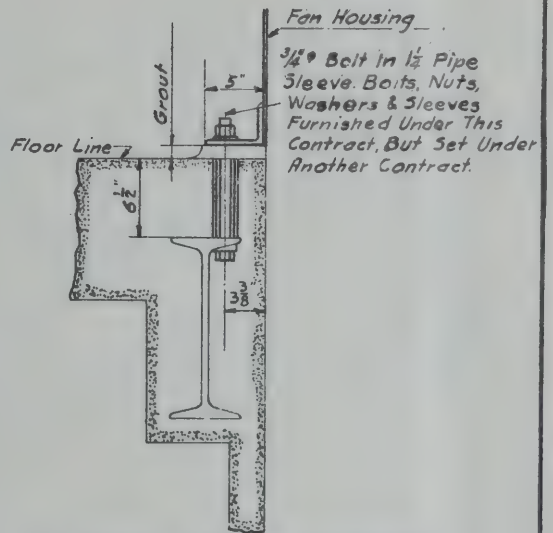
A. C. Wilford
G. B. Stishewell
CONSULTANTS

SCALE: 0 1 2 3 4 5 FEET DATE JULY 1 1923

DRAWN BY *W. M.*
CHECKED BY *W. M.*
FILE NO. 1-12



METHOD OF ATTACHING METAL FLUE AT EXHAUST FAN OUTLET TO CEILING



METHOD OF ANCHORING FAN HOUSING TO FLOOR

SCALE: 0 3 6 9'

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 7

CONSULTANTS

SCALE: 0 1 2 3 4 5 FEET

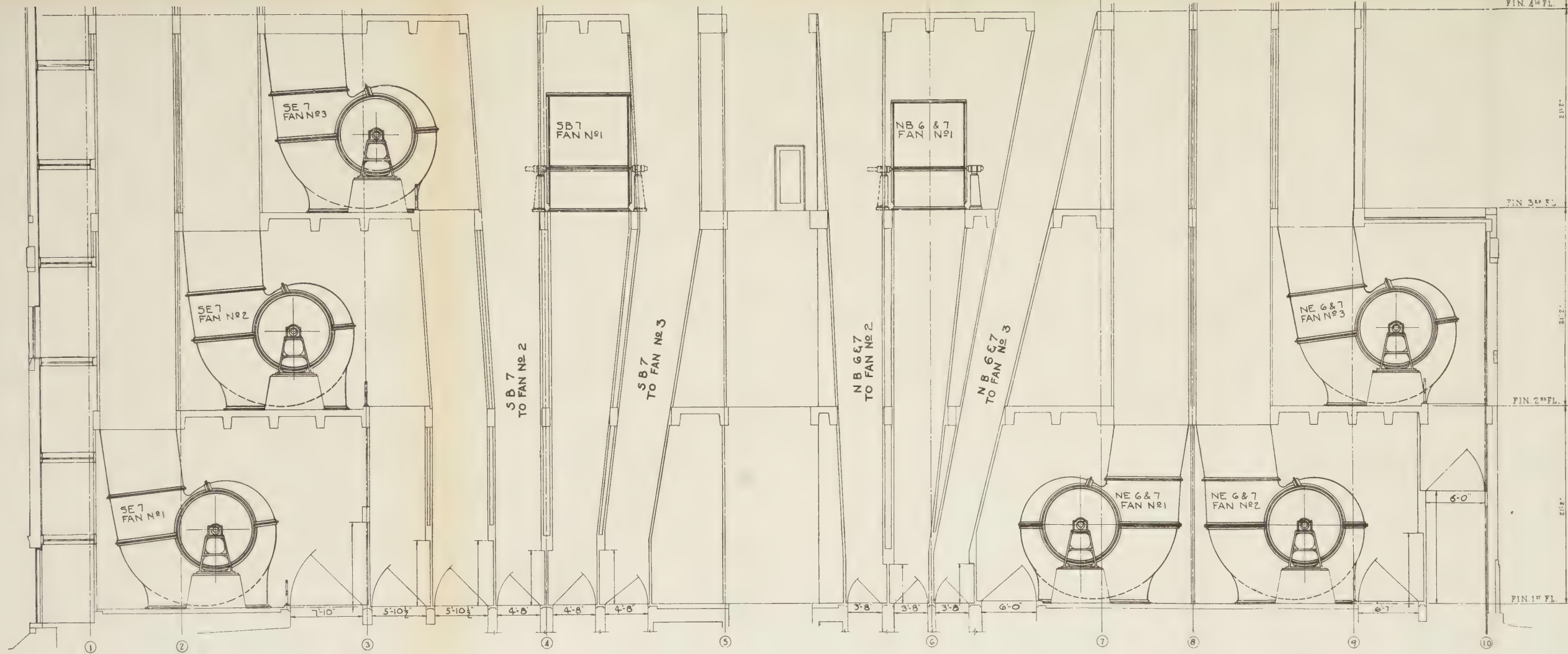
DATE JULY 7, 1925

DRAWN BY *awm*
CHECKED BY *J.H.C.*

Ch. Singeta
CHIEF ENGINEER

FILE NO. 1-17

W. B. Brown
ENGINEER



Brass Or Bronze Through Bolt Or Top Bolt As Determined By Local Conditions. Bolts, Nuts & Washers To Be Furnished Under This Contract.

Metal Flue From Exhaust Fan Outlet

METHOD OF ATTACHING METAL FLUE AT EXHAUST FAN OUTLET TO CEILING



METHOD OF ANCHORING FAN HOUSING TO FLOOR

SCALE: 1" = 6'-0"

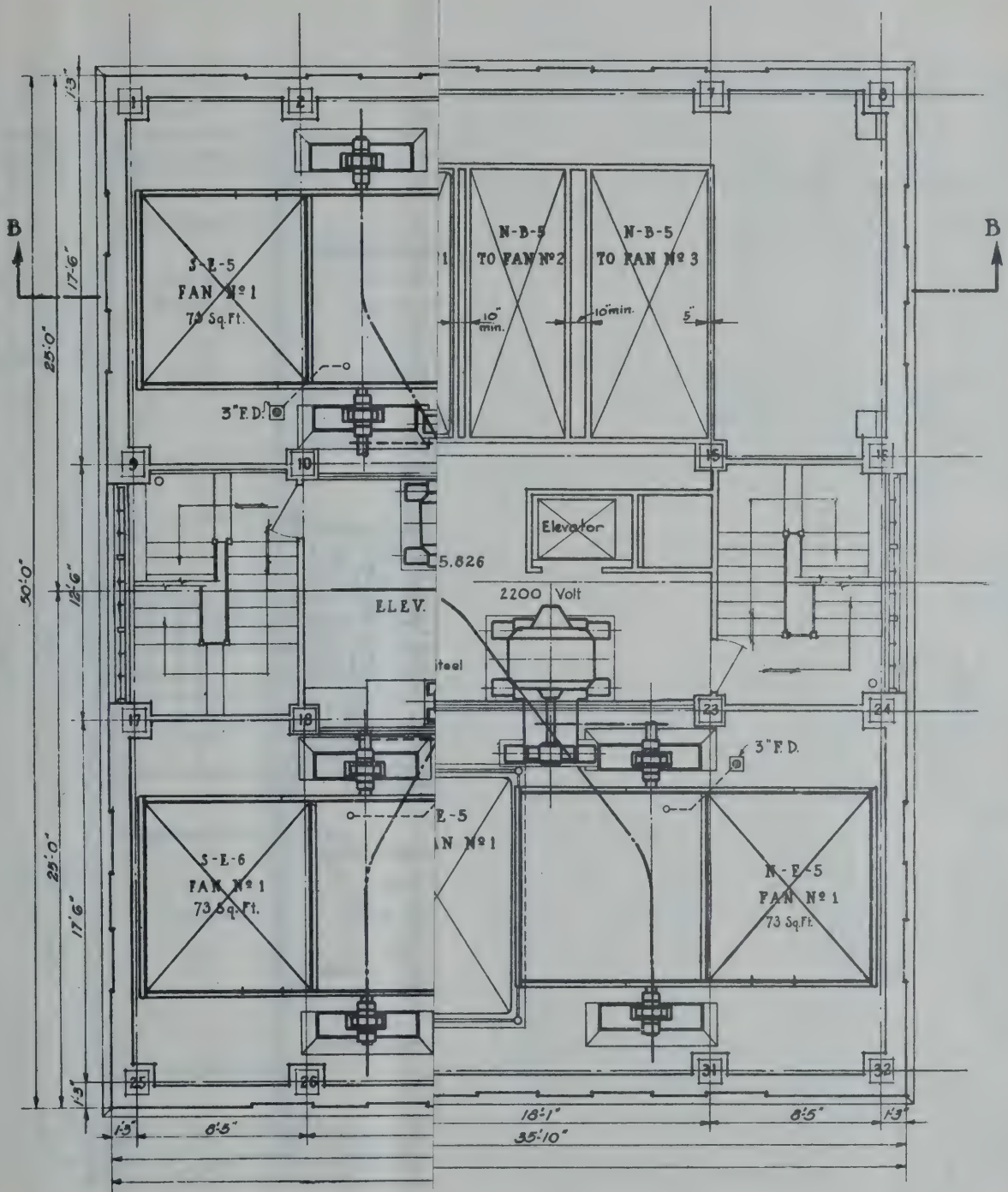
SECTION D-D LOWER PART
LAND VENTILATION BUILDING N.Y.

Albion
MECHANICAL ENGINEER
J. N. D'Adda
ELECTRICAL ENGINEER
Robert S. Smith
ENGINEER OF DESIGN

A. C. Willard
H. B. Willard
CONSULTANTS

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 7

DATE: JULY 7, 1929
DRAWN BY: *W. H. H.*
CHECKED BY: *J. H. C.*
FILE NO. 1-17



SULTANTS

NEW YORK STATE
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BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 8

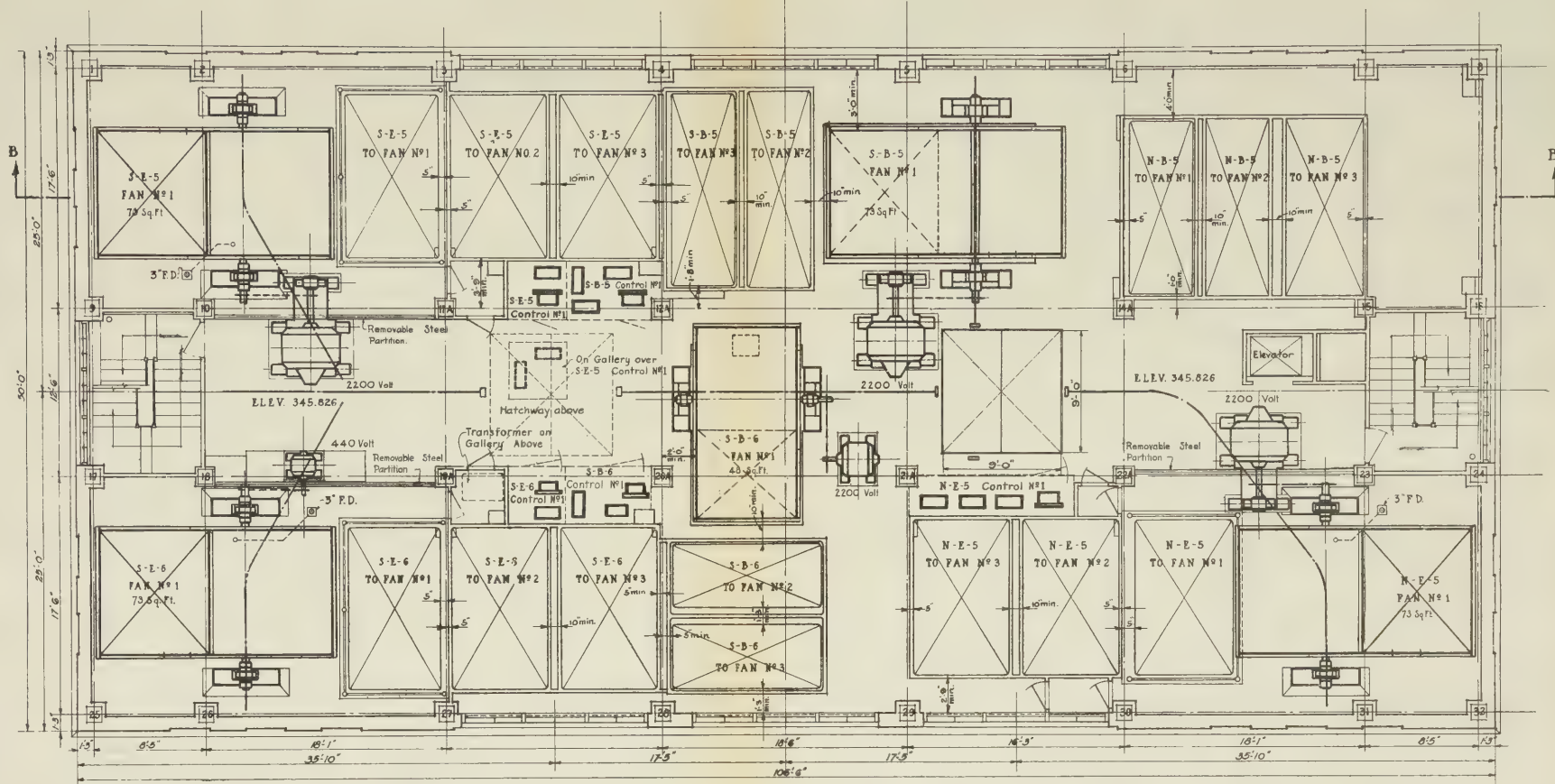
SCALE: 0 1 2 3 4 5 FEET

DATE JULY 7, 1925

Alfred J. Davis
MECHANICAL ENGINEER
John G. Gadd
ELECTRICAL ENGINEER
Ralph Smith
ENGINEER OF DESIGNS

DRAWN BY JHC.
CHECKED BY JHC.

Olaf Singstad
CHIEF ENGINEER
FILE NO. 1-12



SECOND FLOOR PLAN

RIVER VENTILATION BUILDING N. Y.

Chas. F. Willard
Chas. B. Stillwell } CONSULTANTS

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 8

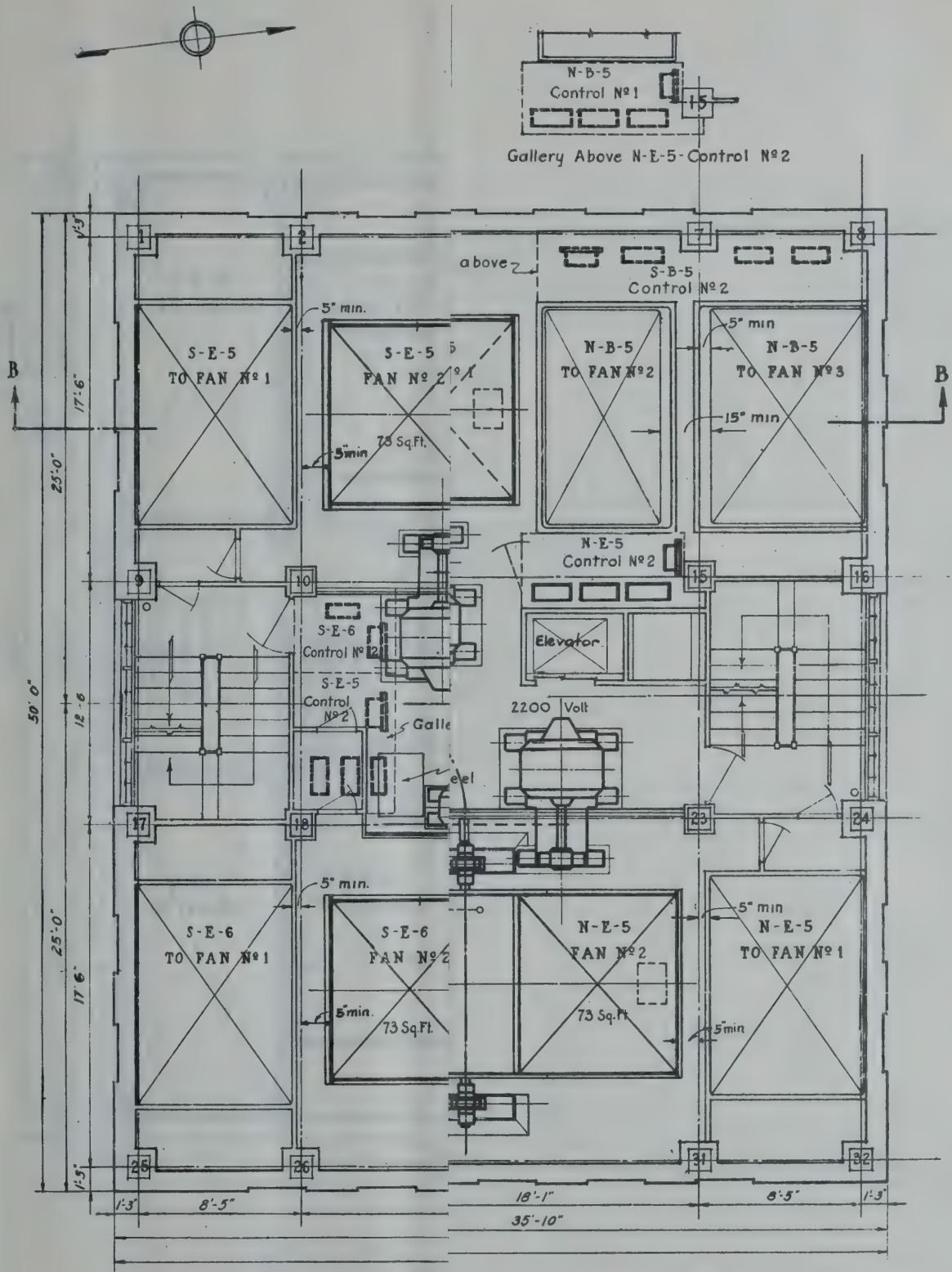
SCALE: 0 1 2 3 4 5 FEET DATE: JULY 7, 1925

DRAWN BY: J. L. C.
CHECKED BY: J. L. C.

Chas. F. Willard
CHIEF ENGINEER

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

Robert J. Willard
ENGINEER OF DESIGN



NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 9

SUBSTANTS

SCALE: 0 1 2 3 4 5 FEET

DATE JULY 7, 1925

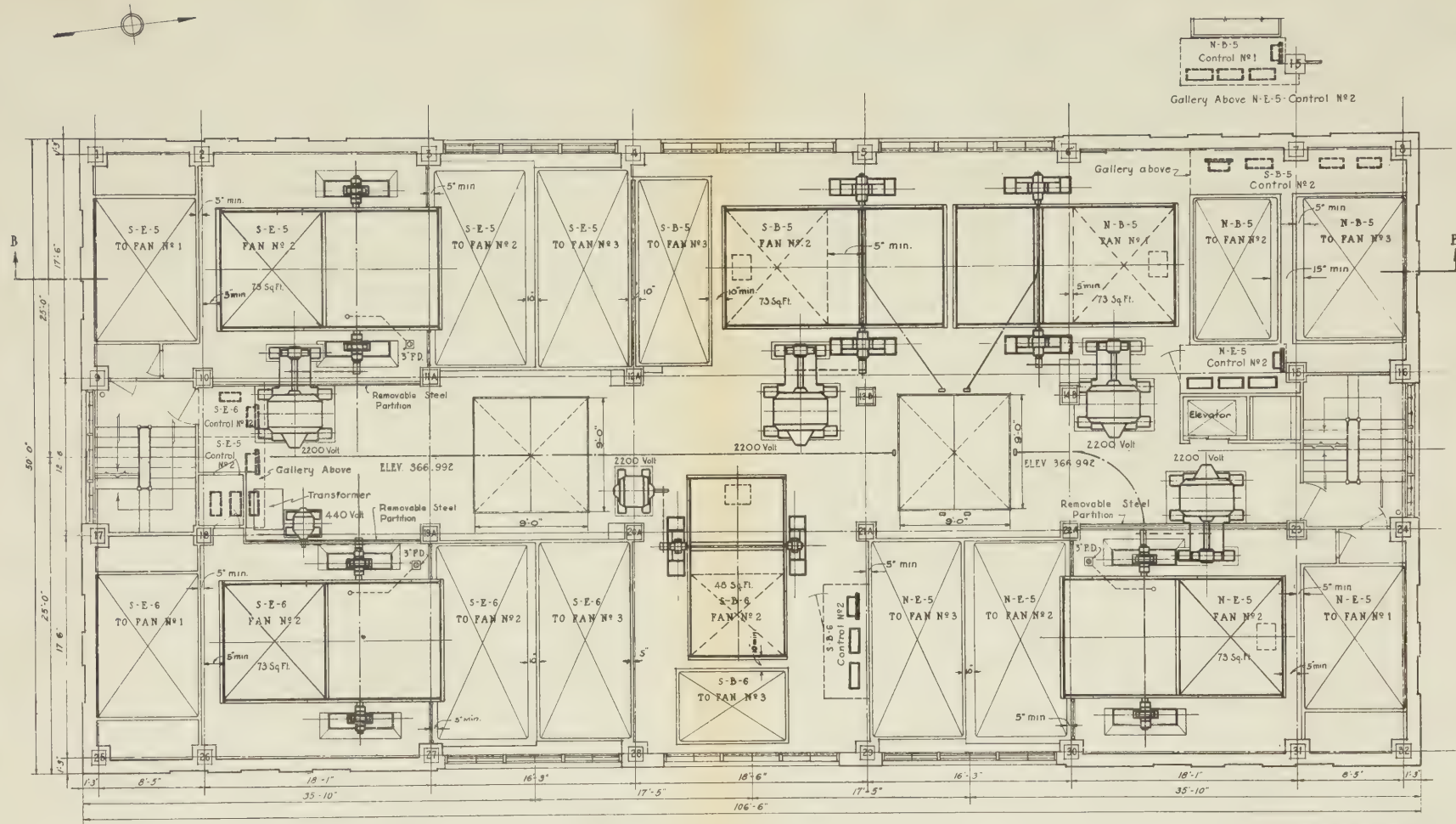
DRAWN BY H.C.
CHECKED BY A.W.M.

Olaf Linquist
CHIEF ENGINEER

FILE NO 1-12

Albano
MECHANICAL ENGINEER
G. N. Duko
ELECTRICAL ENGINEER
Robert Smith
ENGINEER OF DESIGNS

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



THIRD FLOOR PLAN

RIVER VENTILATION BUILDING N.Y.

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
OR
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 9

A.C. Willard
L.B. Stillwell CONSULTANTS

SCALE 1" = 4'-0" FEET

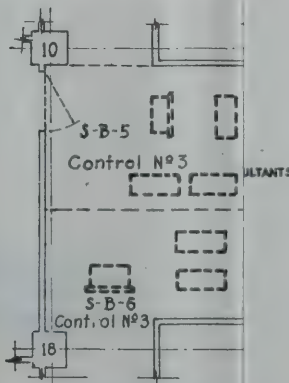
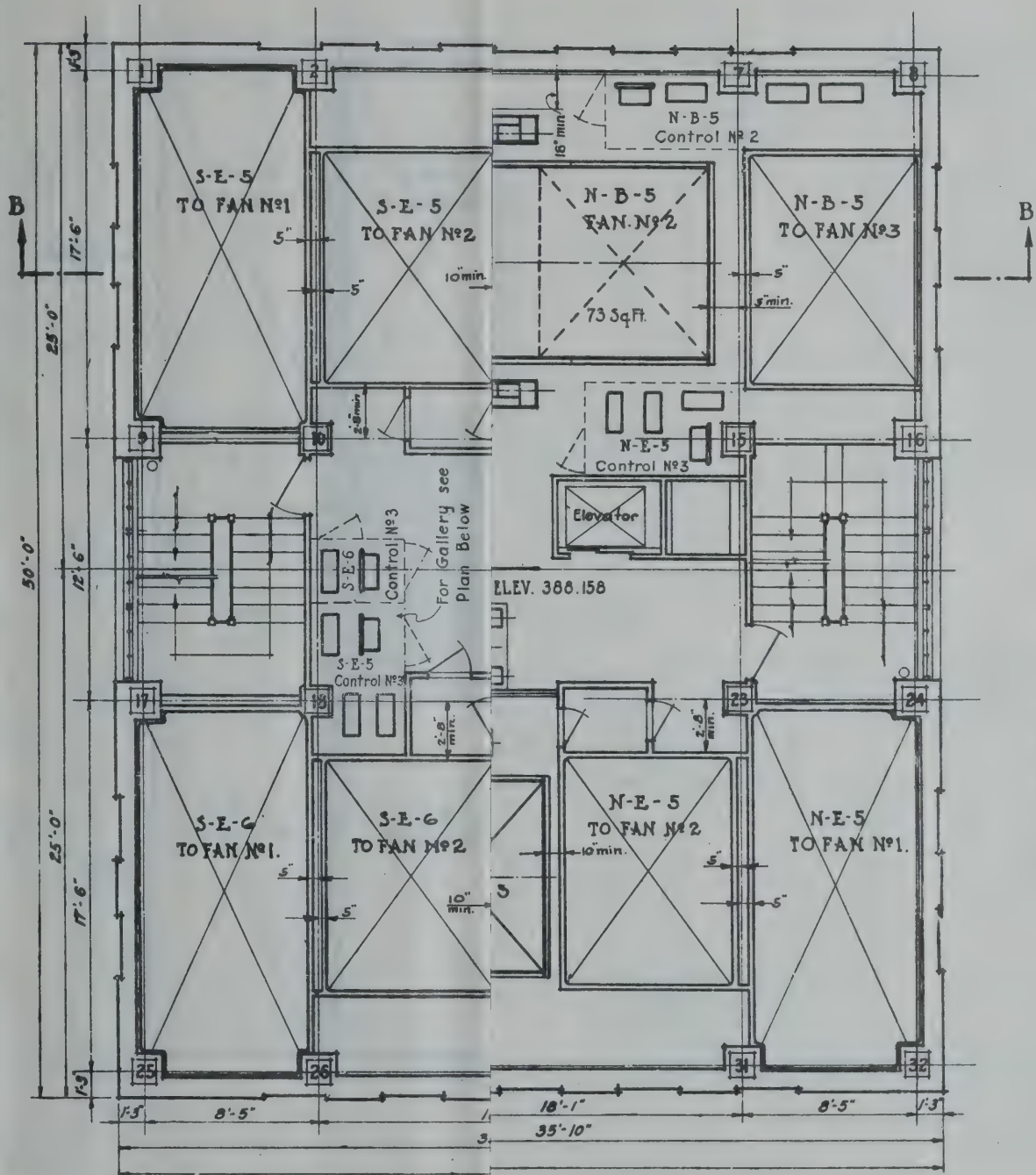
DATE JULY 2, 1923

DRAWN BY J.H.C.
CHECKED BY J.H.C.

Ch. S. S. S.
CHIEF ENGINEER

M. B. Brown, Printing & Binding Co.,
37-41 Chambers Street, N. Y.

Robert Smith
ARCHITECT
9. M. D. D.
ELECTRICAL ENGINEER
SPINNER OF DESIGN



Albano
MECHANICAL ENGINEER

g. n. Gould
ELECTRICAL ENGINEER

Rafael Tumbler
ENGINEER OF DESIGNS

Plan

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 10

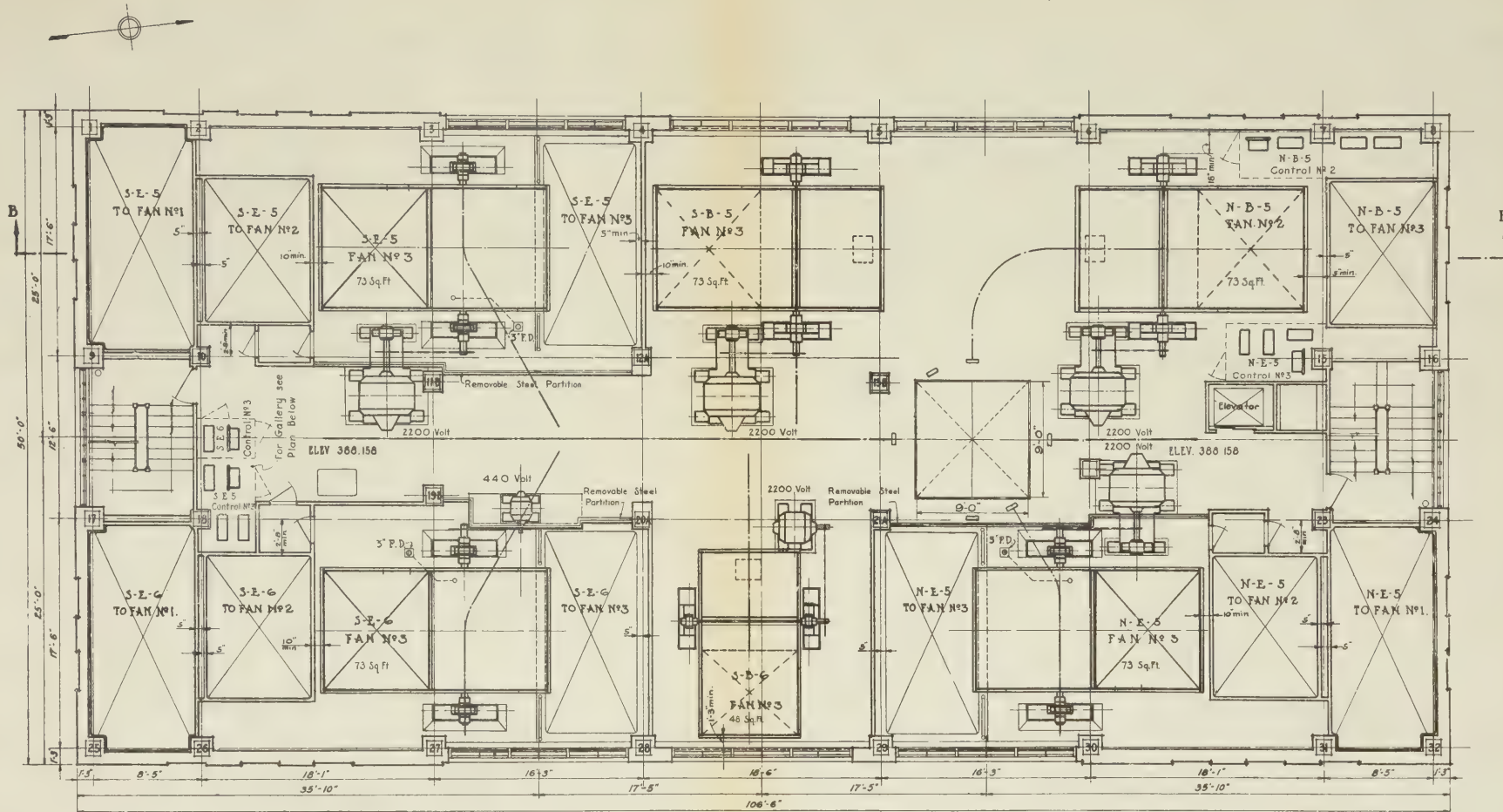
SCALE: 0 1 2 3 4 FEET

DATE JULY 7, 1923

DRAWN BY *J.H.C.*
CHECKED BY *W.M.T.*
Ole Simstad
CHIEF ENGINEER

FILE NO. 1-12

M. E. Brown Printing & Binding Co.
37-41 Chambers Street, N. Y.



FOURTH FLOOR PLAN

RIVER VENTILATION BUILDING N.Y.

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 10

SCALE: 1" = 10' FEET

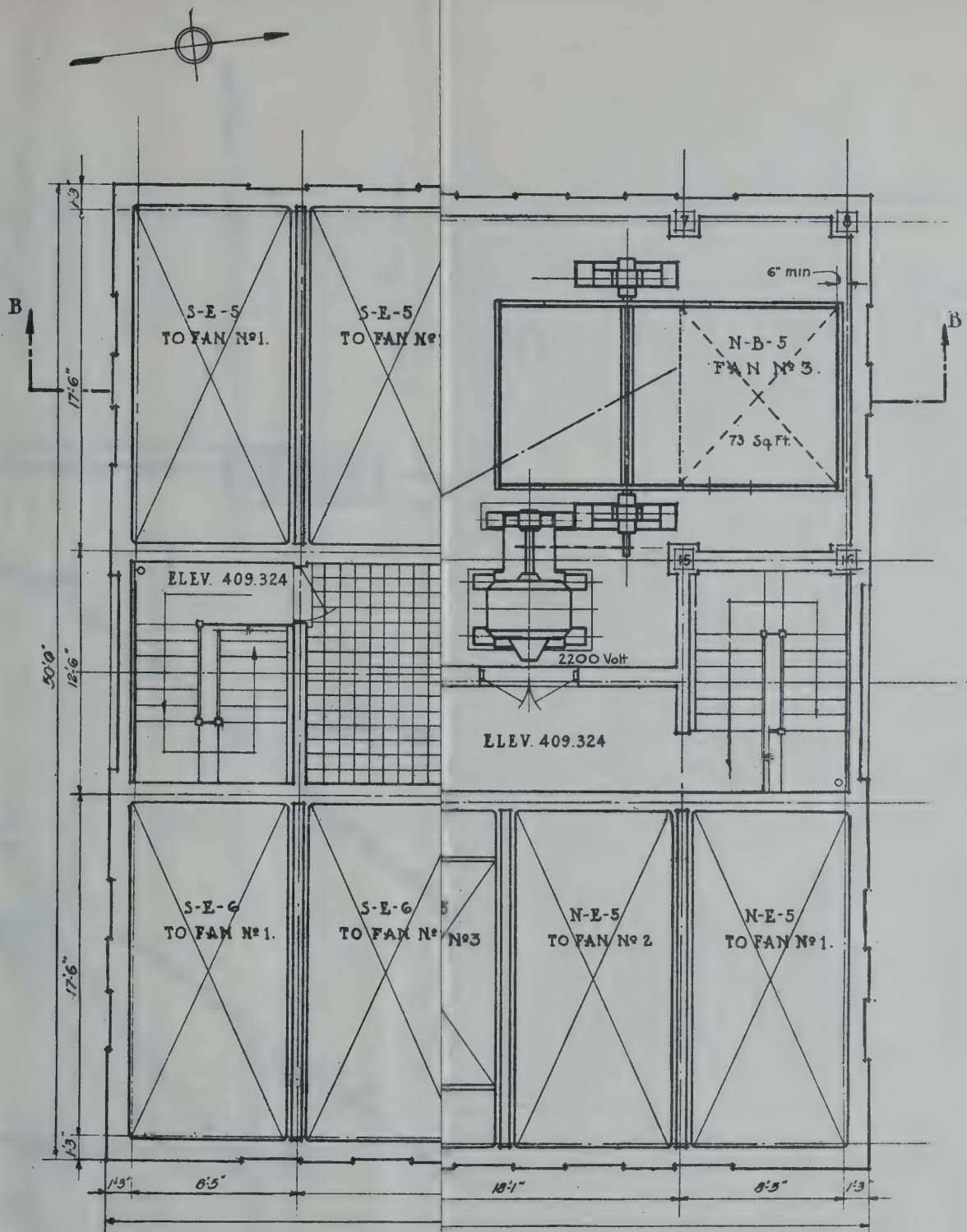
DATE: JULY 7, 1923

DRAWN BY: H.C.
CHECKED BY: J.D.

Olden
CHIEF ENGINEER

FILE NO. 1-12

M. D. Brown, Engineer & Architect
37-41 Chambers Street, N.Y.



NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 11

SCALE: 0 1 2 3 4 5 FEET

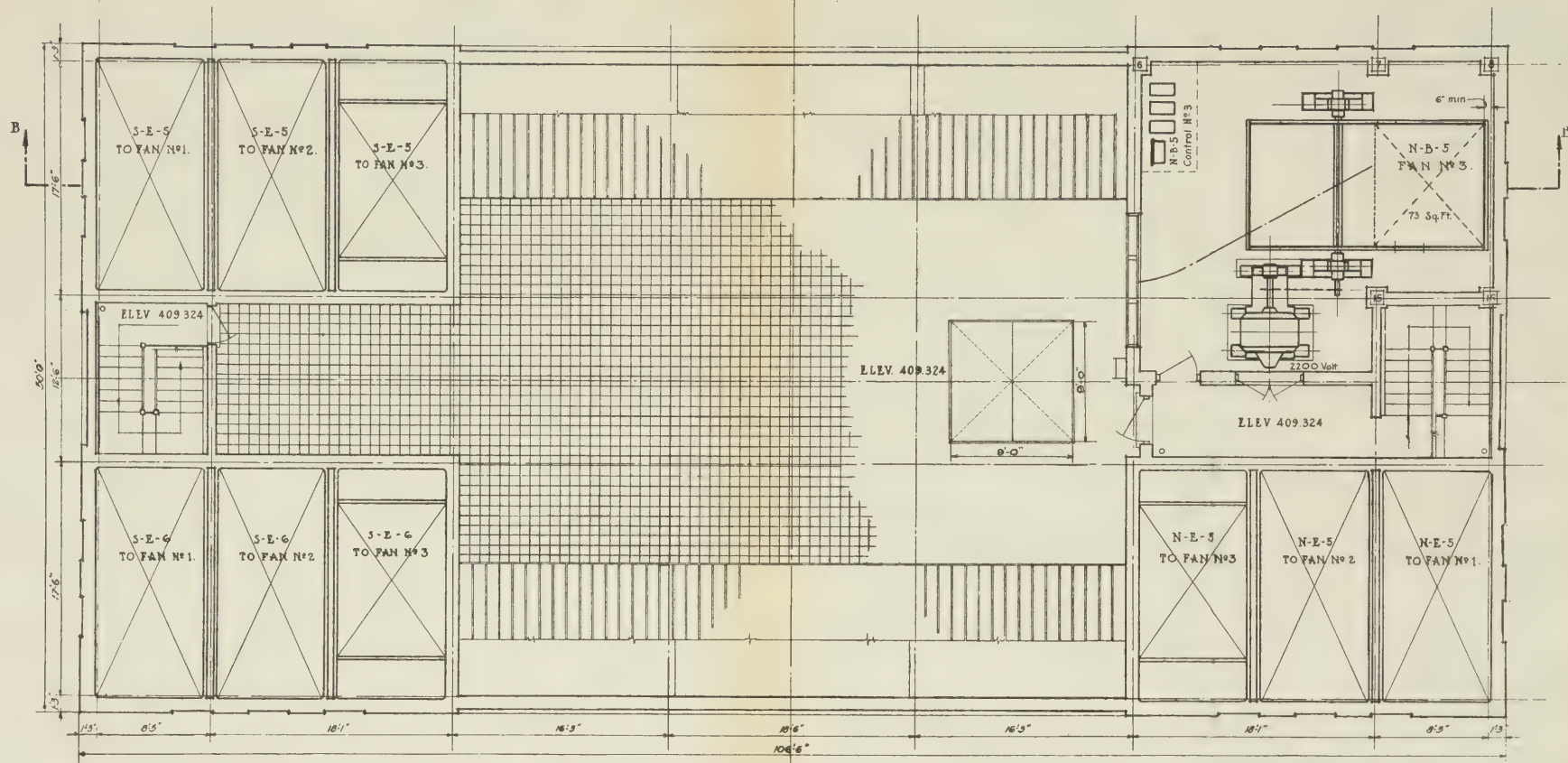
DATE JULY 7, 1925

DRAWN BY H.C.C.
CHECKED BY G.W.M.

O.C. Singstad
CHIEF ENGINEER

FILE NO. 1-12

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



ROOF PLAN

RIVER VENTILATION BUILDING N.Y.

A.C. Willard
L.B. Stillwell } CONSULTANTS

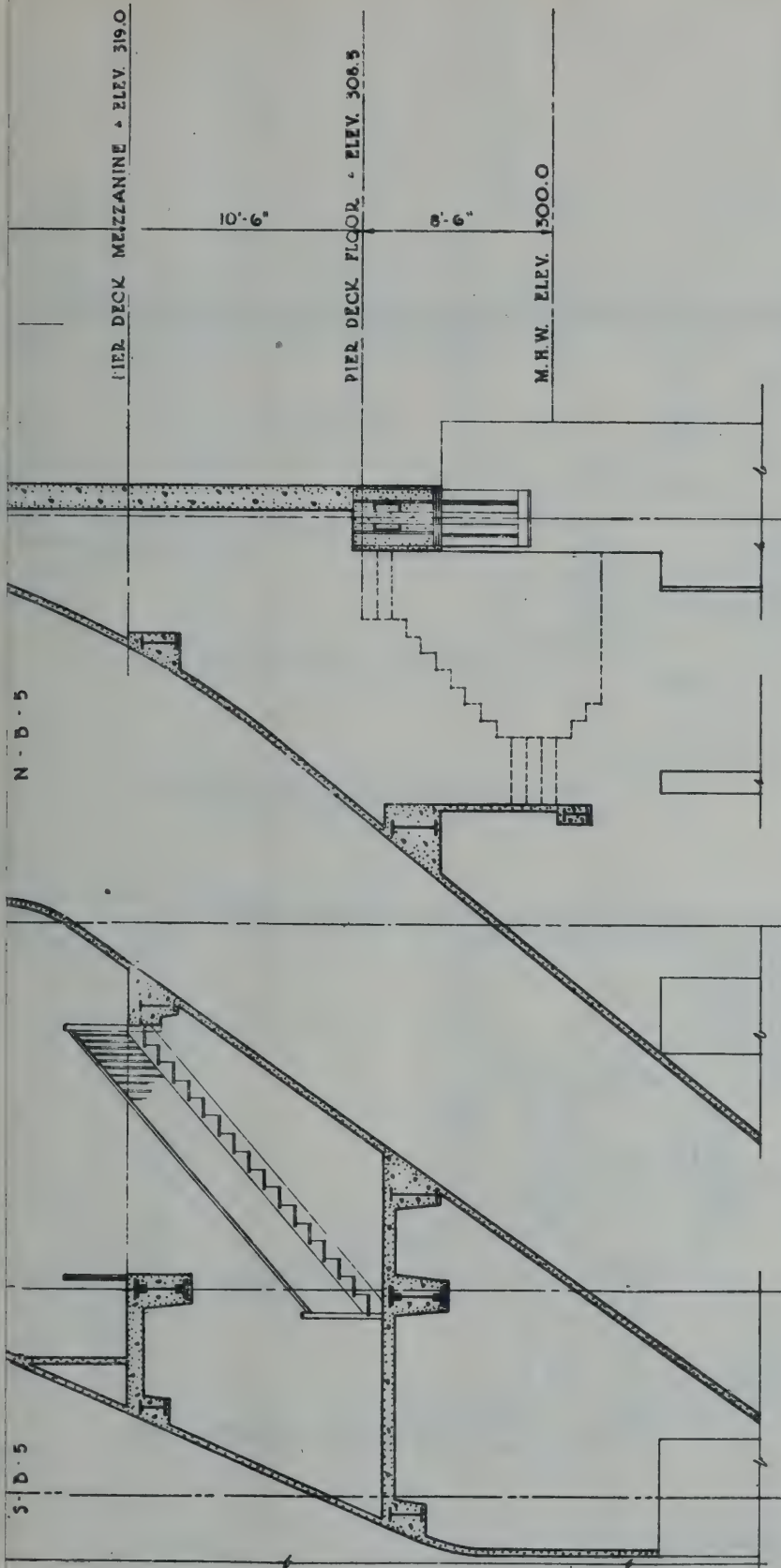
NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 11

SCALE: 0 1 2 3 4 5 FEET DATE JULY 7 1915

DRAWN BY *H.C.*
CHECKED BY *B.M.*

Ch. J. S. S. S.
CHIEF ENGINEER
FILE NO. 1-12

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



NEW YORK STATE
 BRIDGE & TUNNEL COMMISSION
 AND
 NEW JERSEY INTERSTATE
 BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
 CONTRACT No. 12
 CONTRACT DRAWING No. 12

A. F. Willard
E. B. Stillwell } CONSULTANTS

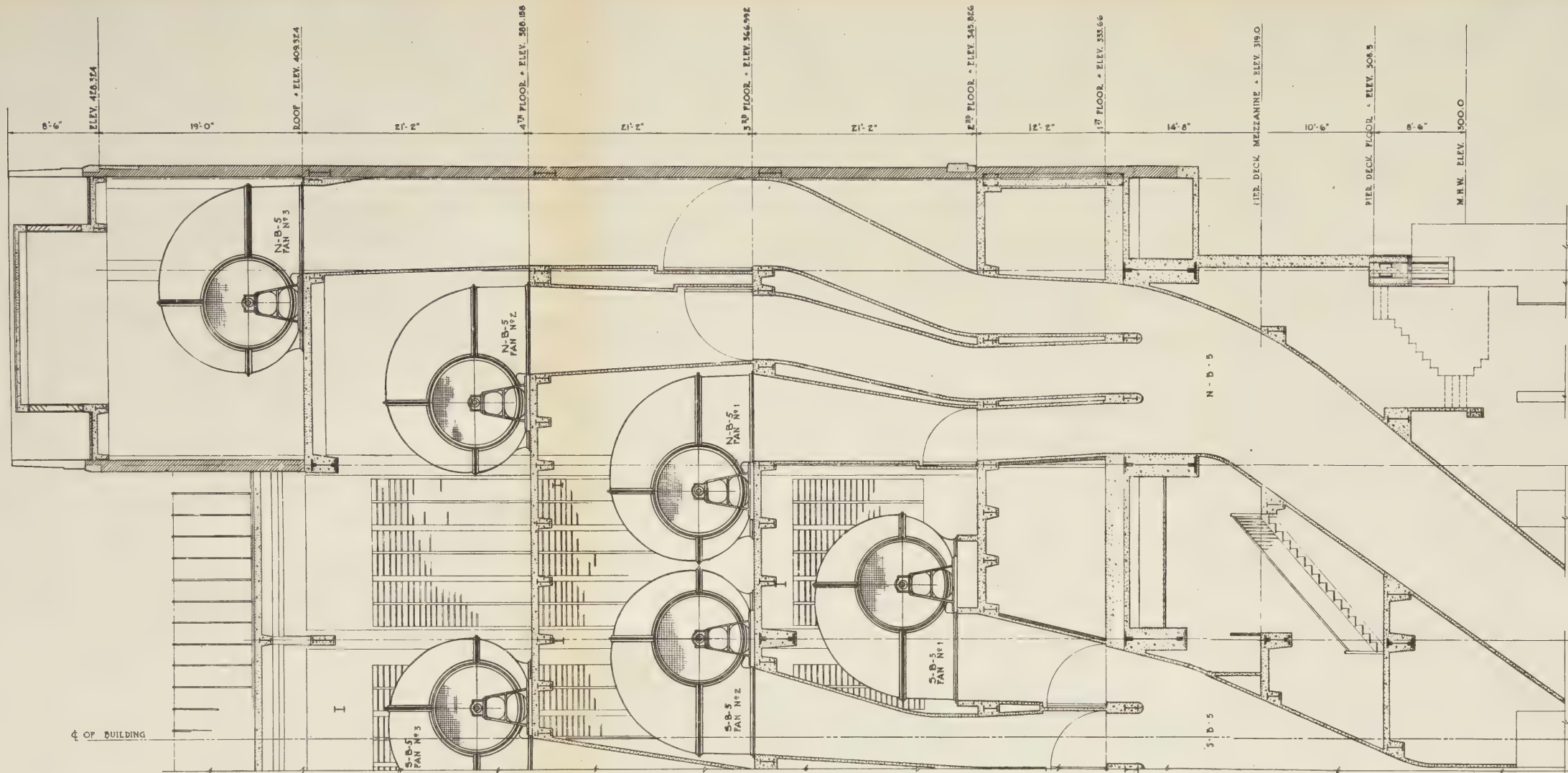
SCALE: 0 1 2 3 4 5 FEET

DATE: JULY 7, 1925

DRAWN BY: *NYC*
 CHECKED BY: *W.M.*

Ole Singstad
 CHIEF ENGINEER

FILE NO. 1712



• SECTION BB • NORTH HALF •

RIVER VENTILATION BUILDING • N.Y. •

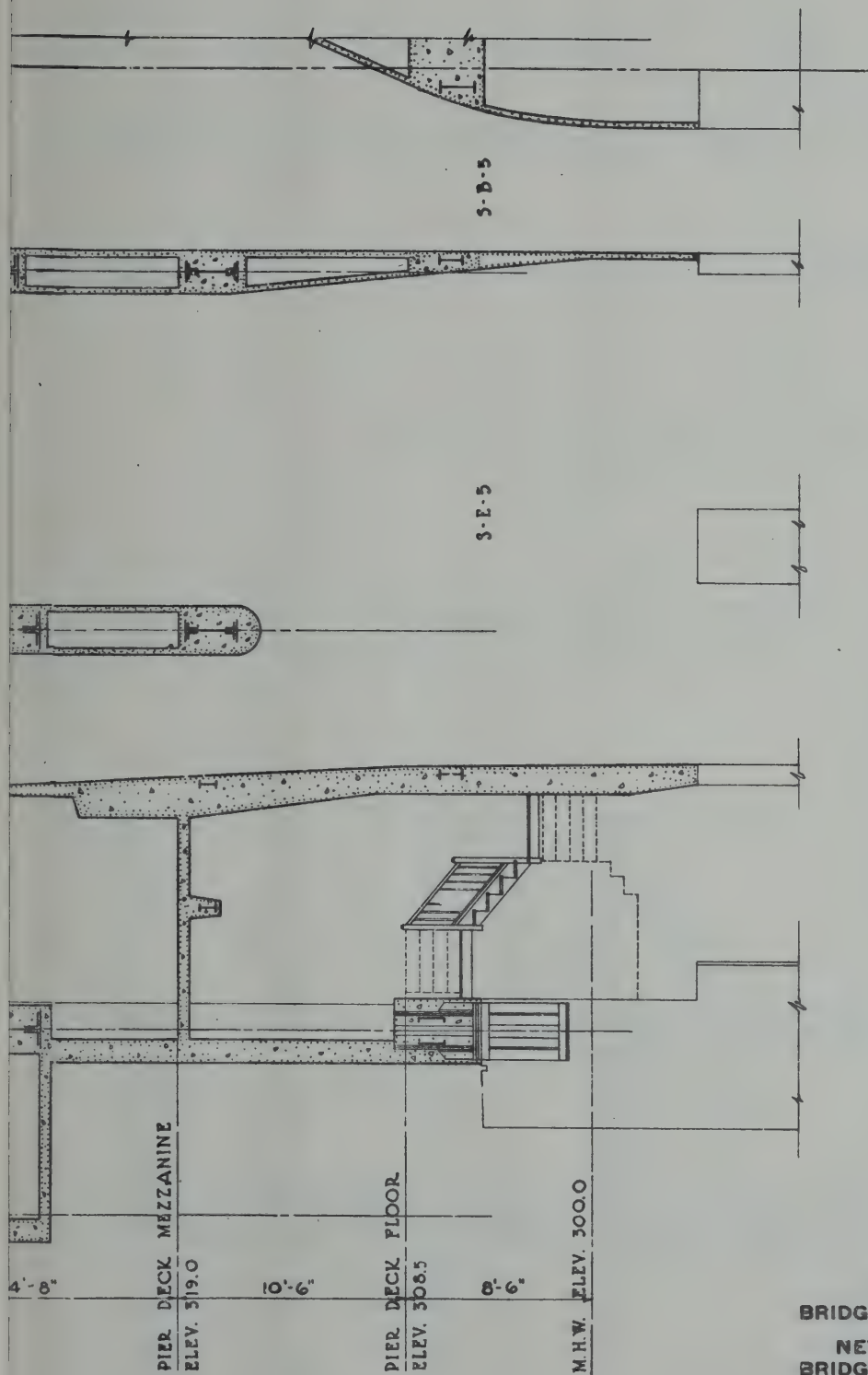
NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 12

A. F. Willard
H. B. Stillwell } CONSULTANTS

SCALE: 0 1 2 3 4 5 FEET DATE: JULY 7, 1913

DRAWN BY *J. H. C.* CHECKED BY *J. H. C.* *Ch. Engstrom* CHIEF ENGINEER FILE NO. 1-12

Robert Smith MECHANICAL ENGINEER
Robert Smith ELECTRICAL ENGINEER
ENGINEER OF DESIGNS



A. C. Willard
E. B. Stillwell } CONSULTANTS

NEW YORK STATE
 BRIDGE & TUNNEL COMMISSION
 AND
 NEW JERSEY INTERSTATE
 BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
 CONTRACT No. 12
 CONTRACT DRAWING No. 13

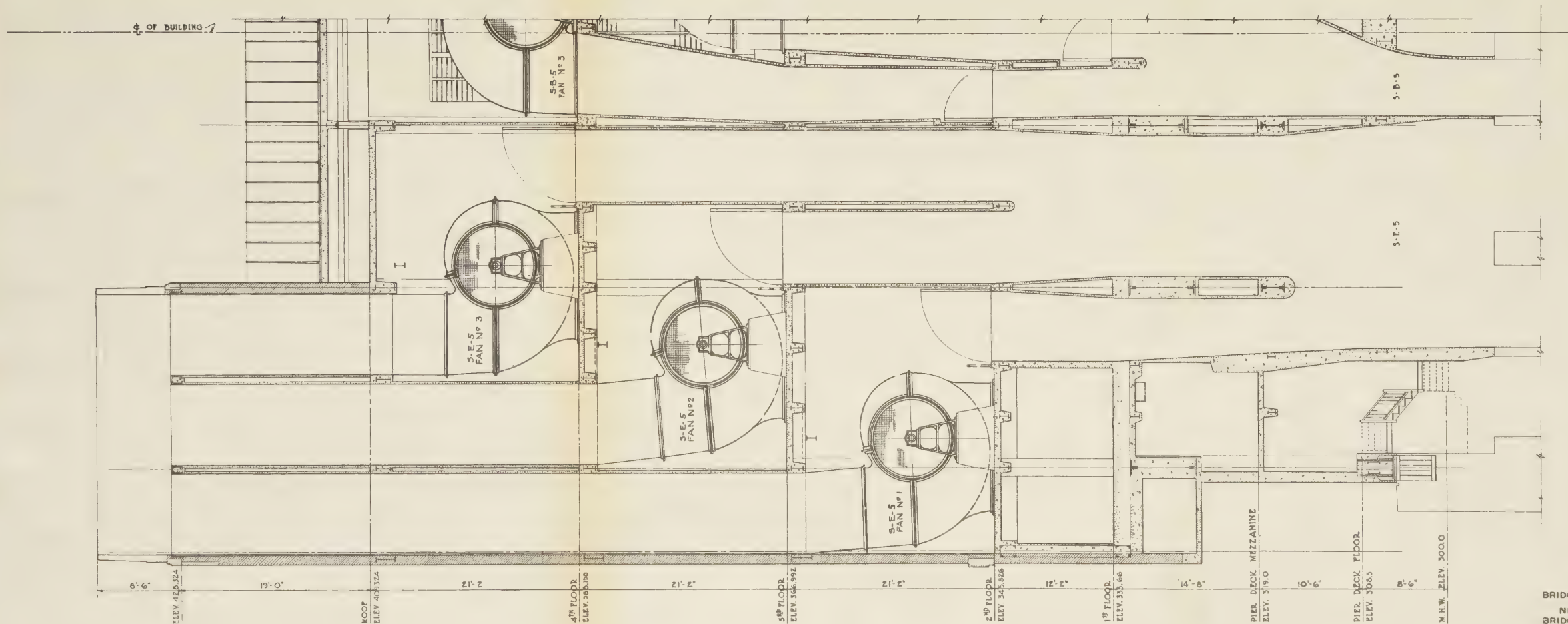
SCALE: 0 1 2 3 4 5 FEET

DATE JULY 7, 1923

DRAWN BY *HYC*
 CHECKED BY *SWM*

Ch. Singstad
 CHIEF ENGINEER

FILE NO. 1-12



SECTION BE - SOUTH HALF

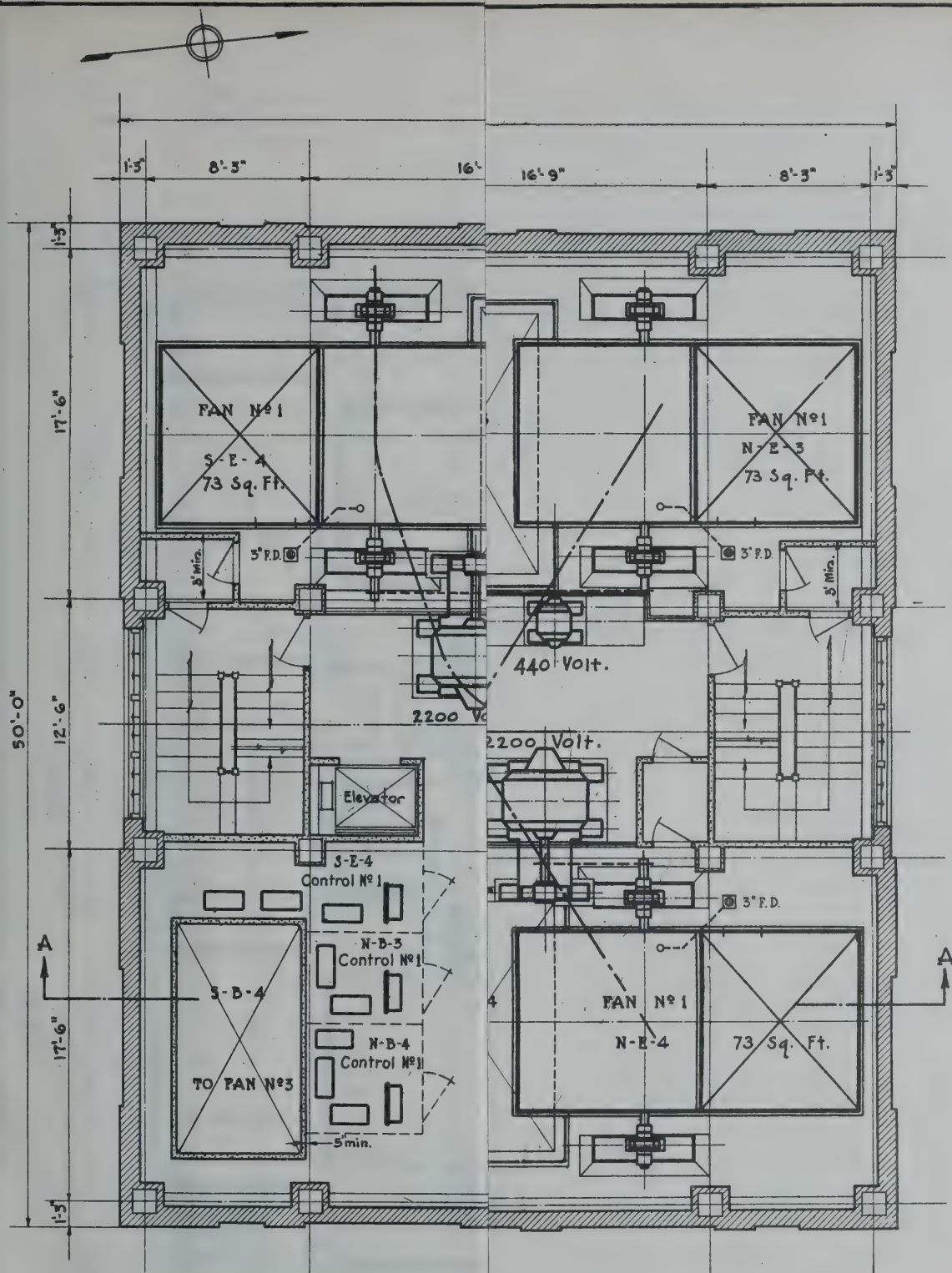
RIVER VENTILATION BUILDING - N.Y.

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 18

A. C. Willard
G. B. Fildes
CONSULTANTS

SCALE 0 1 2 3 4 FEET
DATE JULY 1, 1923
DRAWN BY J. H. C.
CHECKED BY G. W. M.
FILE NO. 1-12

Alvan
MECHANICAL ENGINEER
Robert Smith
ELECTRICAL ENGINEER
ENGINEER OF DESIGNS



NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 14

CONSULTANTS

SCALE: 0 1 2 3 4 5 FEET

DATE JULY 7, 1925

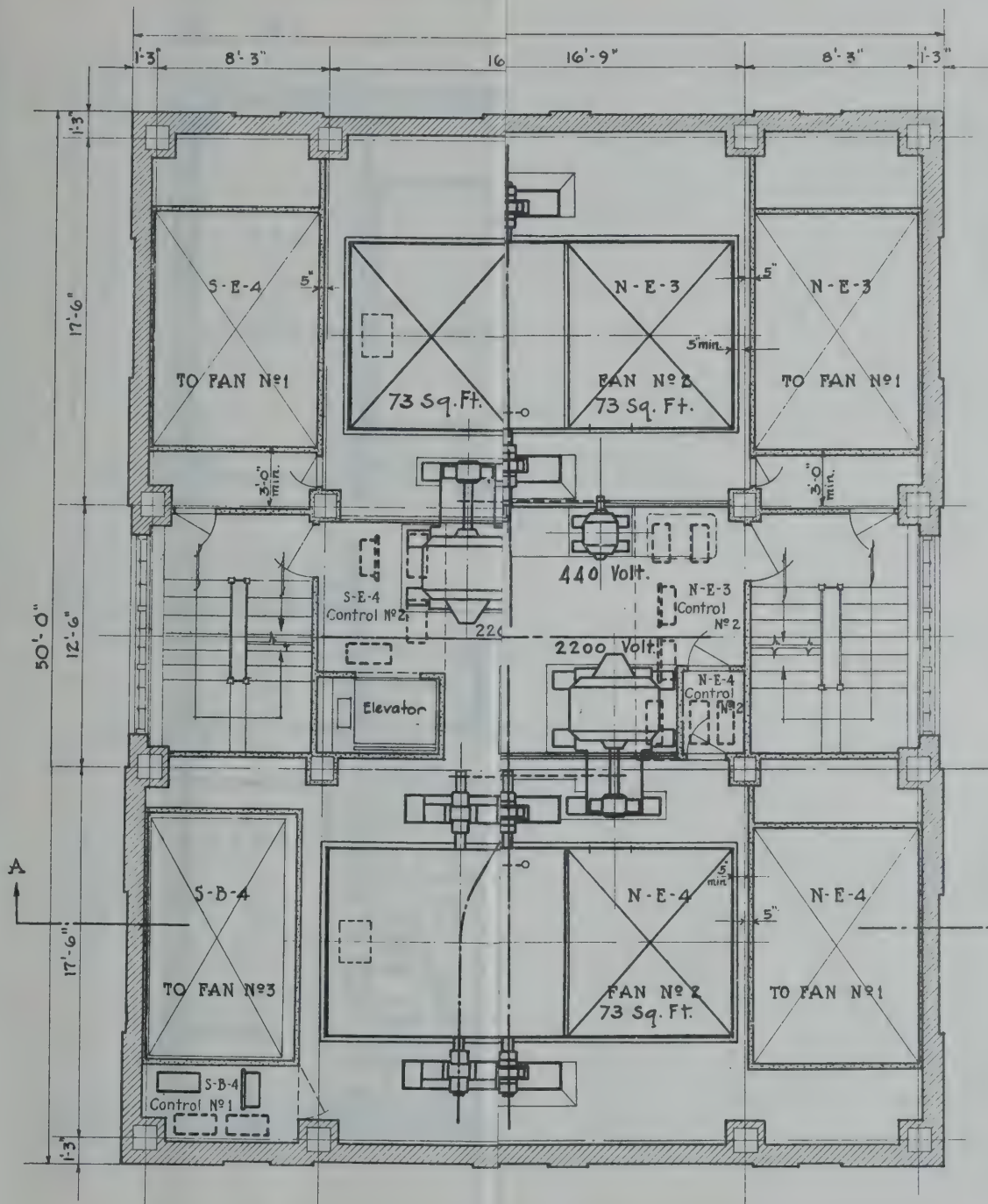
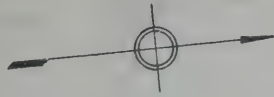
Albain
MECHANICAL ENGINEER
W. A. Dodd
ELECTRICAL ENGINEER
Robert Smullen
ENGINEER OF DESIGN

DRAWN BY *W. H. H.*
CHECKED BY *W. H. H.*

Oliver Simstad
CHIEF ENGINEER

FILE NO. 1-12

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 15

CONSULTANTS

SCALE: 0 1 2 3 4 5 FEET

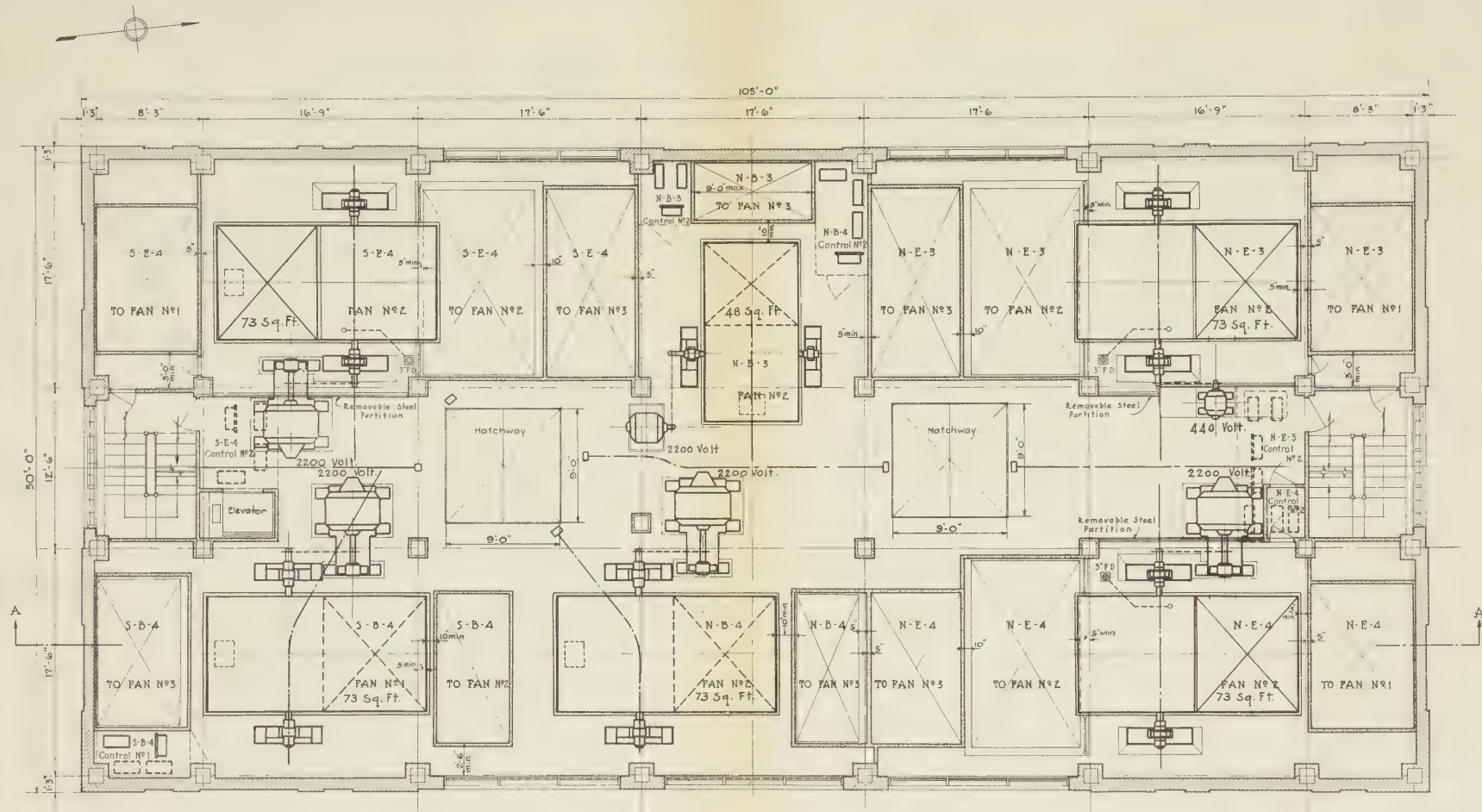
DATE JULY 7, 1925

DRAWN BY J. H. C.
CHECKED BY C. W. M.

Olaf Singstad
CHIEF ENGINEER

FILE NO. 1-12

Alban
MECHANICAL ENGINEER
J. N. Wood
ELECTRICAL ENGINEER
Robert Smiley
ENGINEER OF DESIGNS



• THIRD FLOOR PLAN •

• RIVER VENTILATION BUILDING • N.J. •

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT NO. 12
CONTRACT DRAWING NO. 15

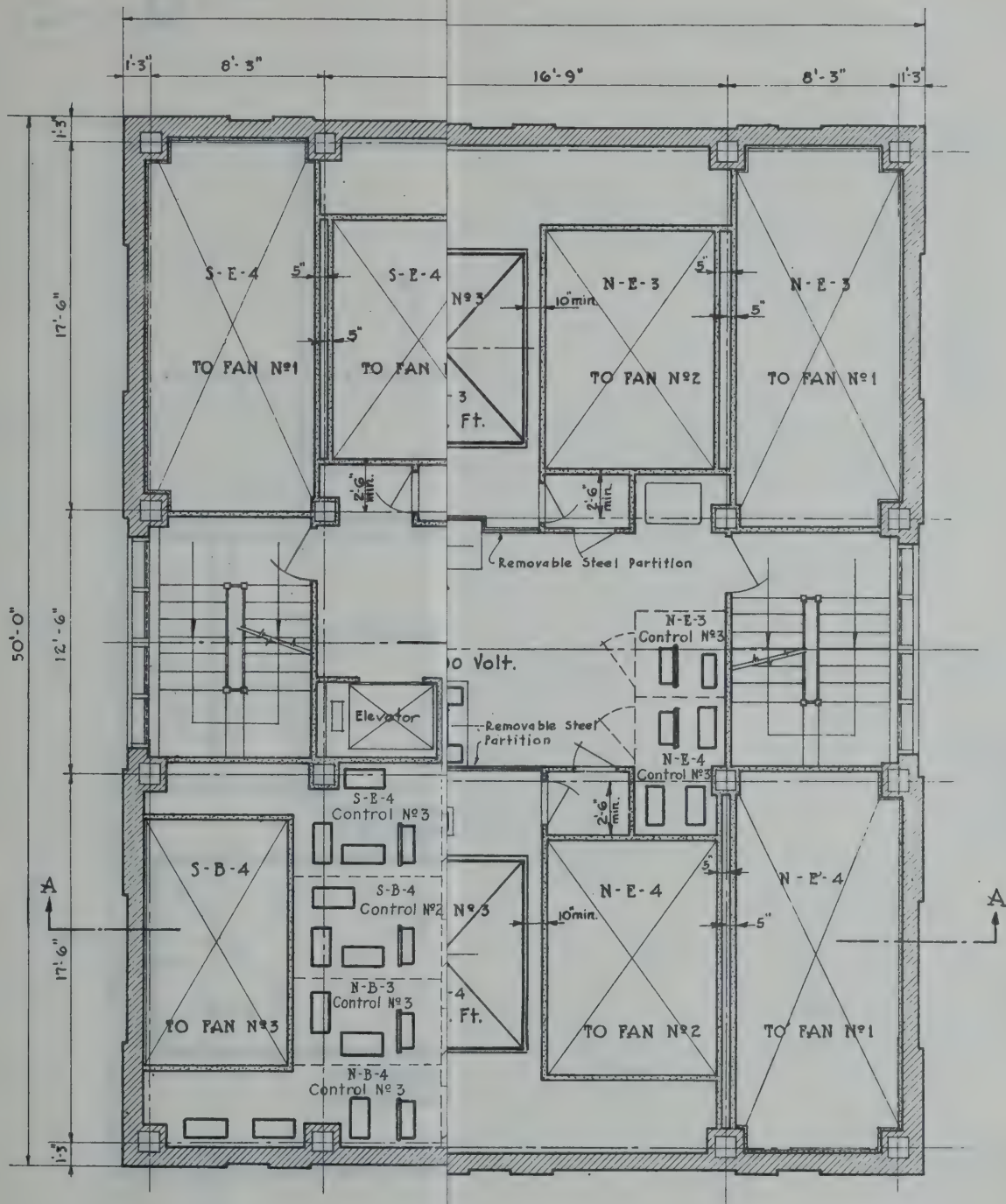
Asst. W. L. Leland
Chas. B. Stillwell } CONSULTANTS

SCALE: 0 1 2 3 4 FEET DATE: JULY 7, 1925

DRAWN BY: HHC
CHECKED BY: GWT

Chas. B. Stillwell
CHIEF ENGINEER

FILE NO. 1-12



NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 16

CONSULTANTS

SCALE: 0 1 2 3 4 5 FEET

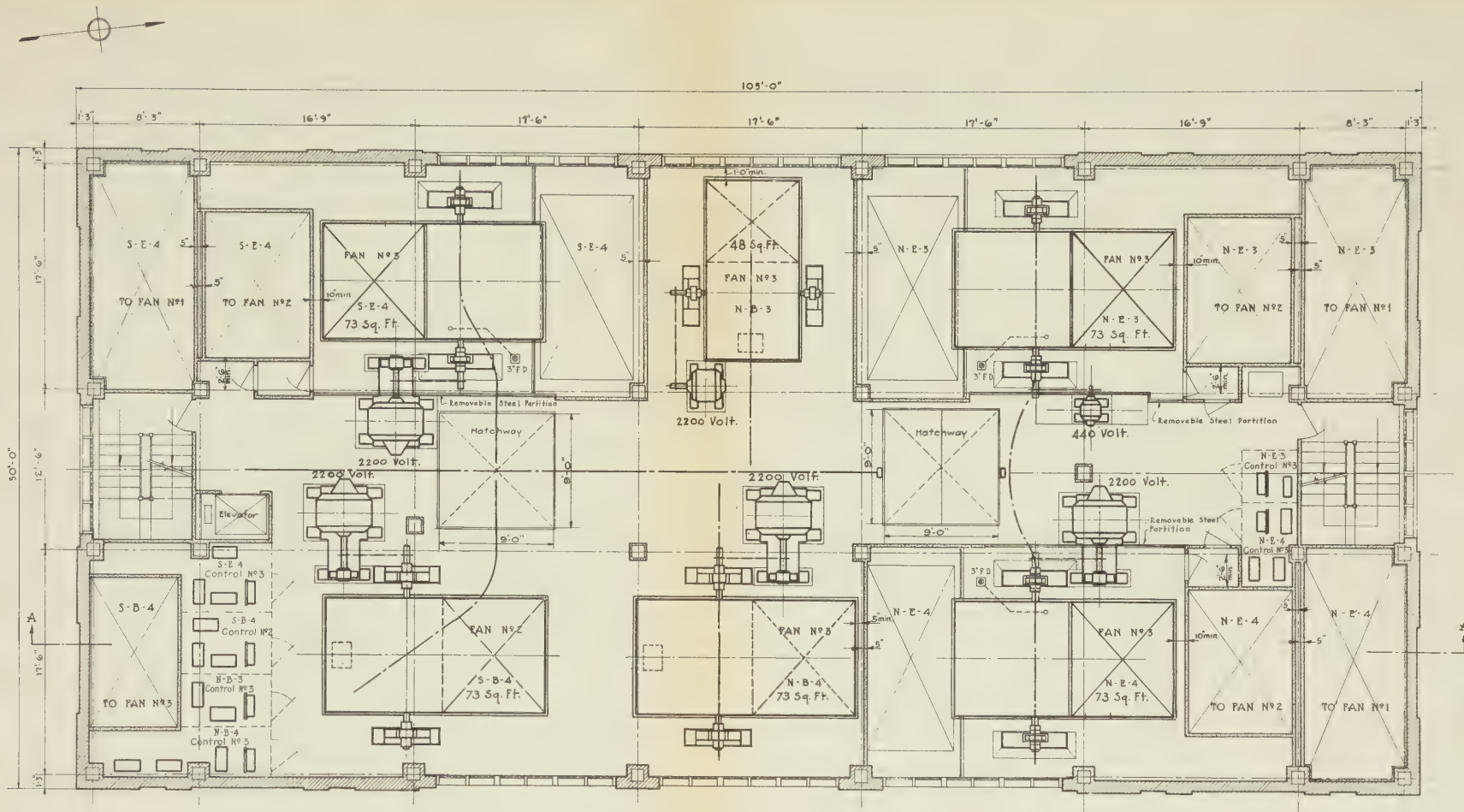
DATE JULY 7, 1918

DRAWN BY *W. H. H.*
CHECKED BY *C. W. M.*

O. E. Singstad
CHIEF ENGINEER

FILE NO. 1-18

W. H. H.
MECHANICAL ENGINEER
J. N. Dodd
ELECTRICAL ENGINEER
W. H. H.
ENGINEER OF DESIGNS



• FOURTH FLOOR PLAN •

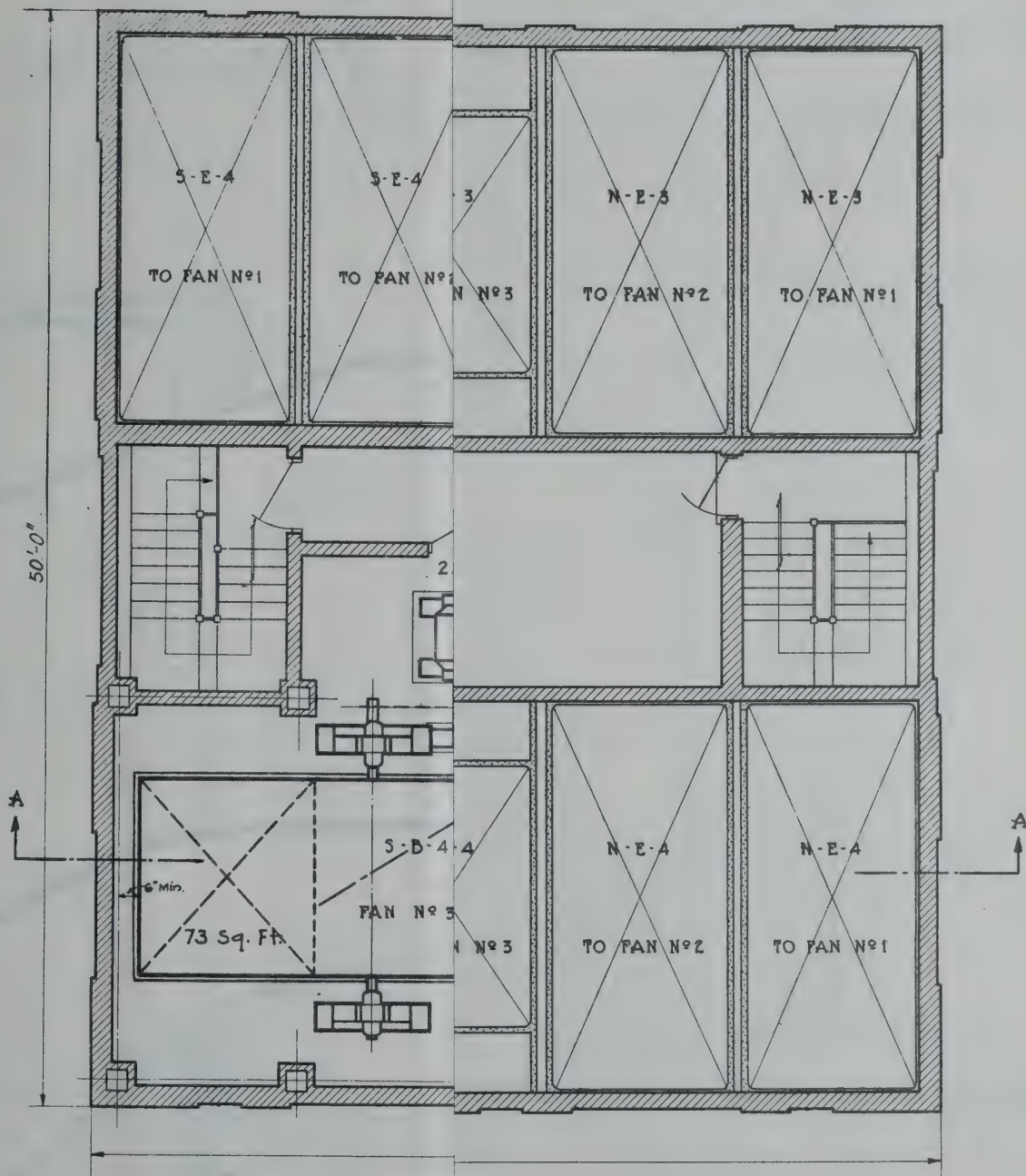
• RIVER VENTILATION BUILDING • N.J. •

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 16

A. L. Willard
CONSULTANTS

SCALE: 1" = 4' 0" FEET DATE: JULY 7, 1932
DRAWN BY: H. C. C. CHECKED BY: J. B. W. CHIEF ENGINEER: *Oliver Singstad*
FILE NO. 1-18

McNair
MECHANICAL ENGINEER
J. N. Dodd
ELECTRICAL ENGINEER
W. J. Smith
ENGINEER OF DESIGN



NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 17

CONSULTANTS

SCALE: 0 1 2 3 4 5 FEET DATE JULY 7, 1925

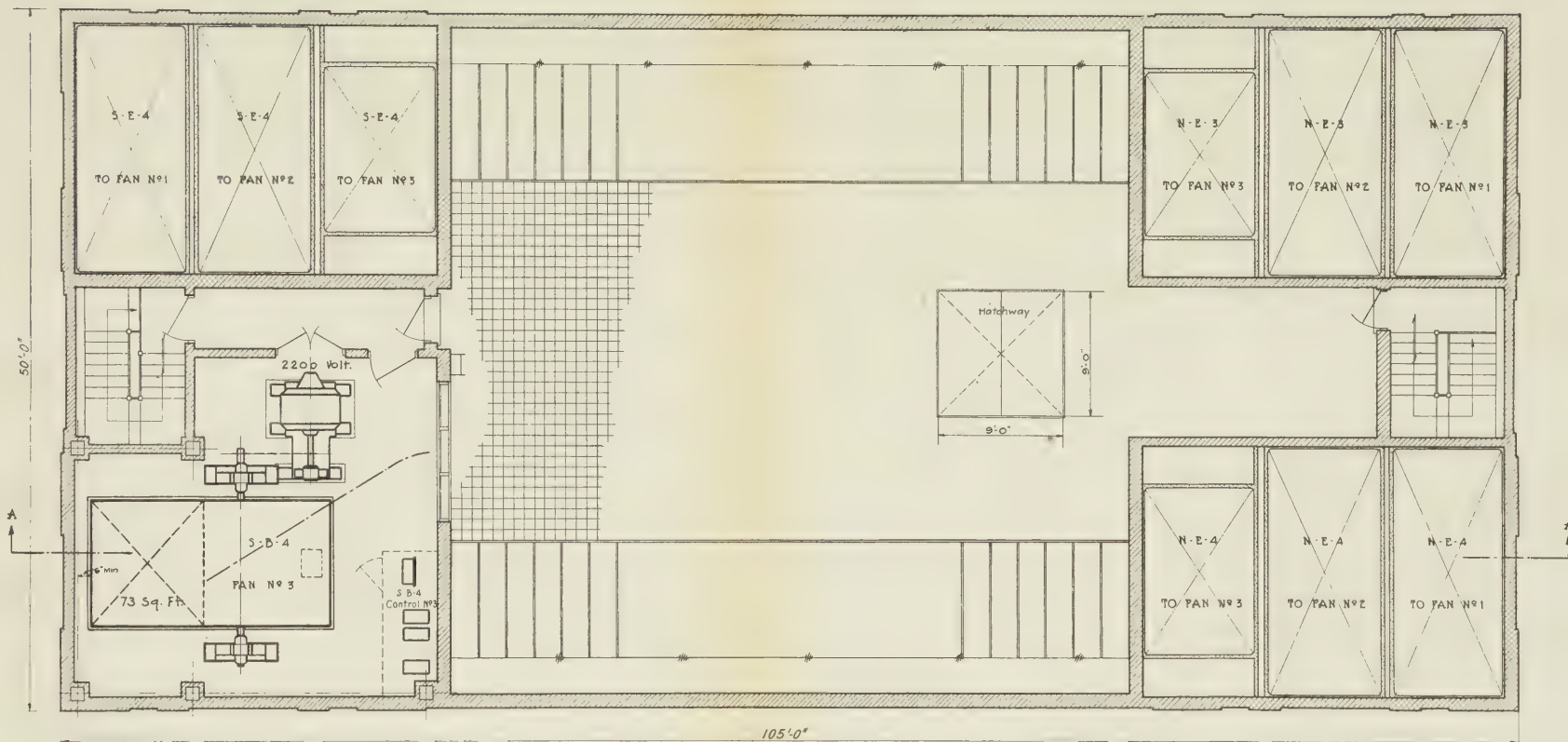
DRAWN BY J. H. C.
CHECKED BY J. H. C.

Oliver S. Sargent
CHIEF ENGINEER

FILE NO. 1-12

W. H. Sargent
MECHANICAL ENGINEER
J. N. Sargent
ELECTRICAL ENGINEER
W. H. Sargent
ENGINEER OF DESIGNS

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



• ROOF PLAN •

• RIVER VENTILATION BUILDING • N.J. •

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 17

A.C. Willard
H.B. Willard } CONSULTANTS

SCALE: 0" = 1" = 3" = 6" = 12" FEET DATE JULY 7, 1935

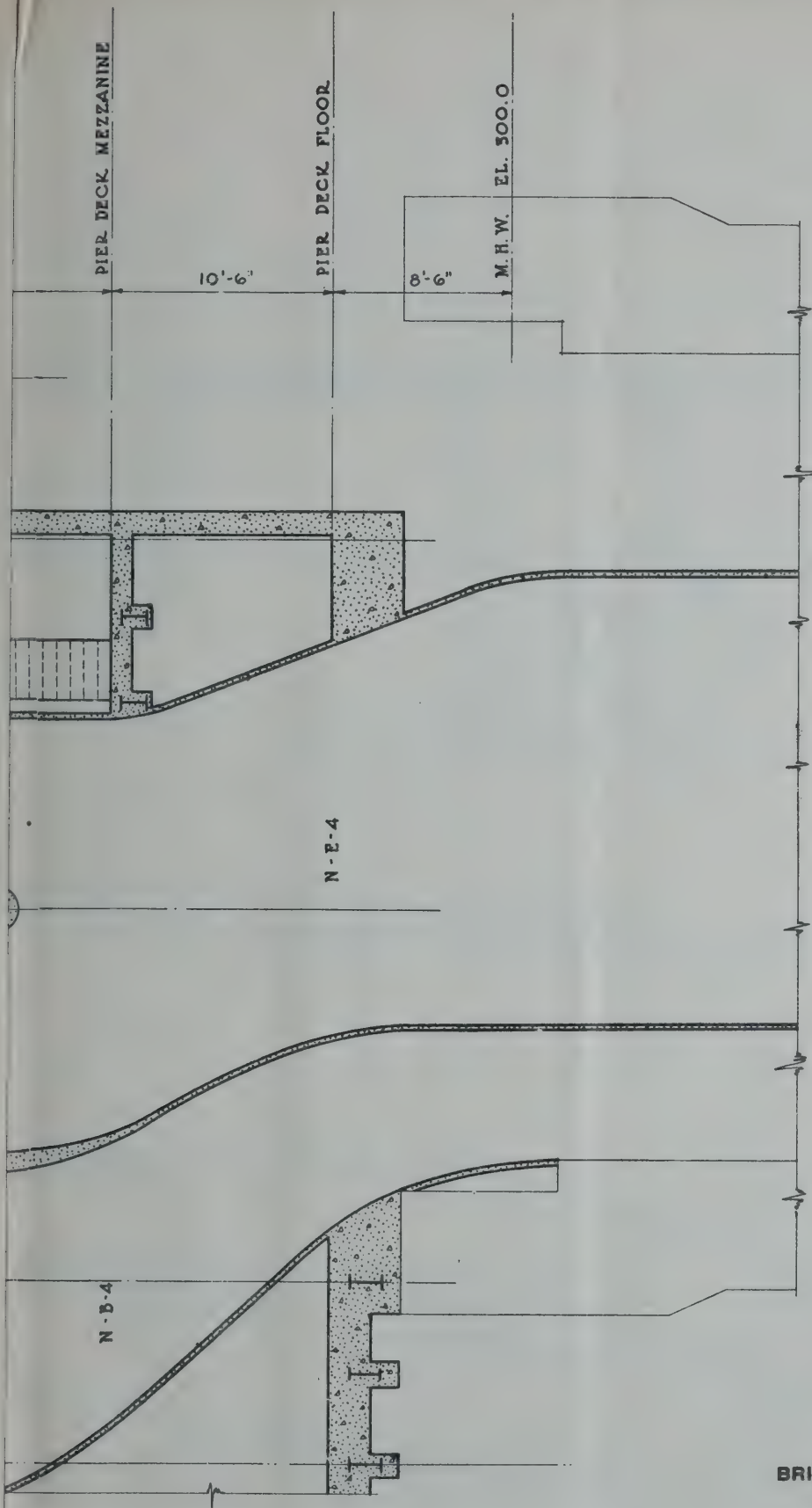
DRAWN BY *J.M.C.*
CHECKED BY *W.M.*

D. Suptad
CHIEF ENGINEER

FILE NO. 141E

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

Albany
MECHANICAL ENGINEER
G.N. Hall
ELECTRICAL ENGINEER
ENGINEER OF DESIGN



NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 18

A. L. Willard
E. B. Stillwell } CONSULTANTS

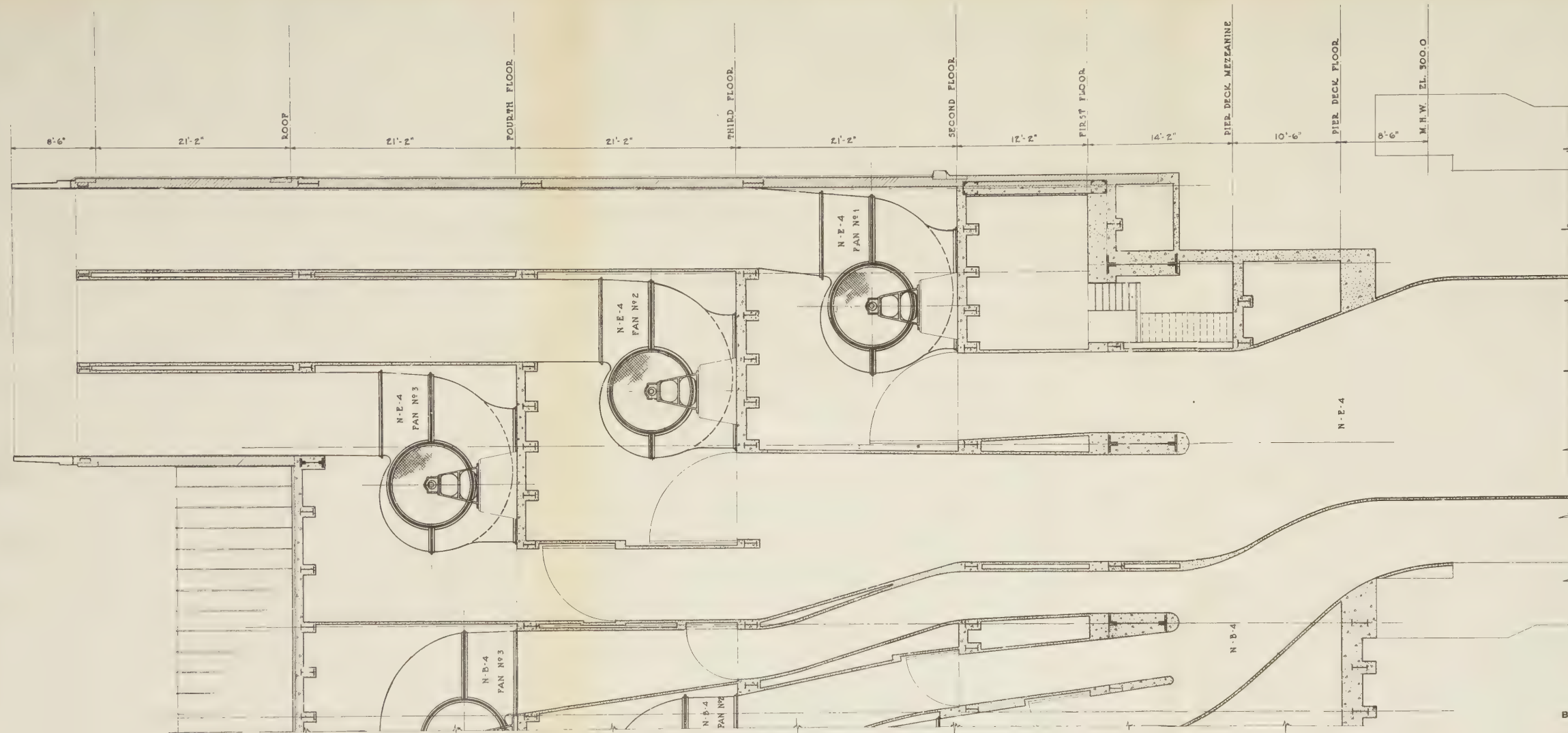
SCALE: 0 1 2 3 4 5 FEET

DATE JULY 7, 1925

DRAWN BY *hpc.*
CHECKED BY *sum.*

Ol. Singstad
CHIEF ENGINEER

FILE NO. 1-12



• SECTION AA • NORTH HALF •
• RIVER VENTILATION BUILDING • N.J. •

W. L. Smith
MECHANICAL ENGINEER
W. L. Smith
ELECTRICAL ENGINEER
ENGINEER OF DESIGN

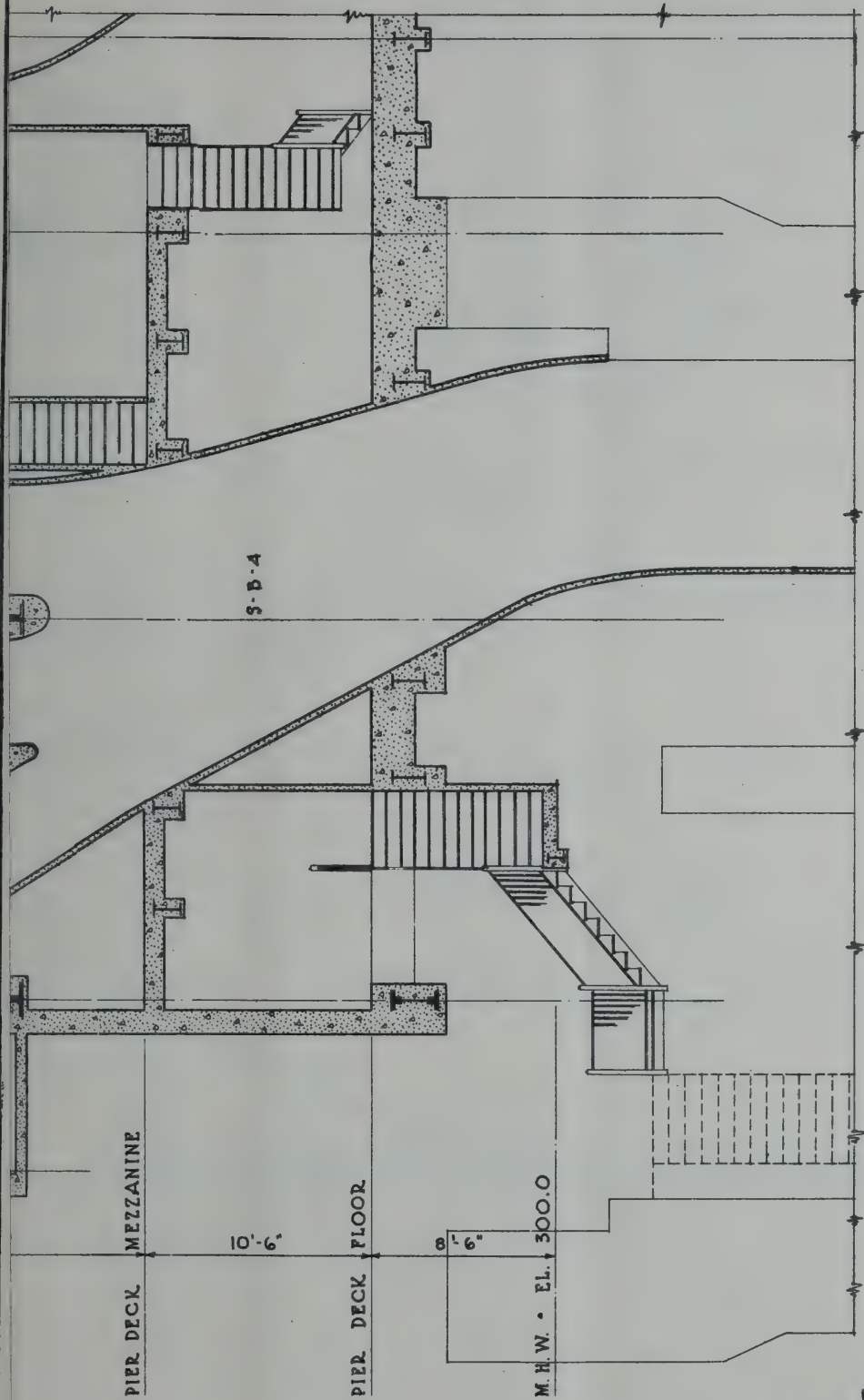
A. F. Willard
H. B. Stillwell } CONSULTANTS

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT NO. 12
CONTRACT DRAWING NO. 18

SCALE: 0 1 2 3 4 5 FEET DATE: JULY 1, 1928

DRAWN BY *W. L. Smith*
CHECKED BY *W. L. Smith*

W. L. Smith
CHIEF ENGINEER
FILE NO. 1-12



NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

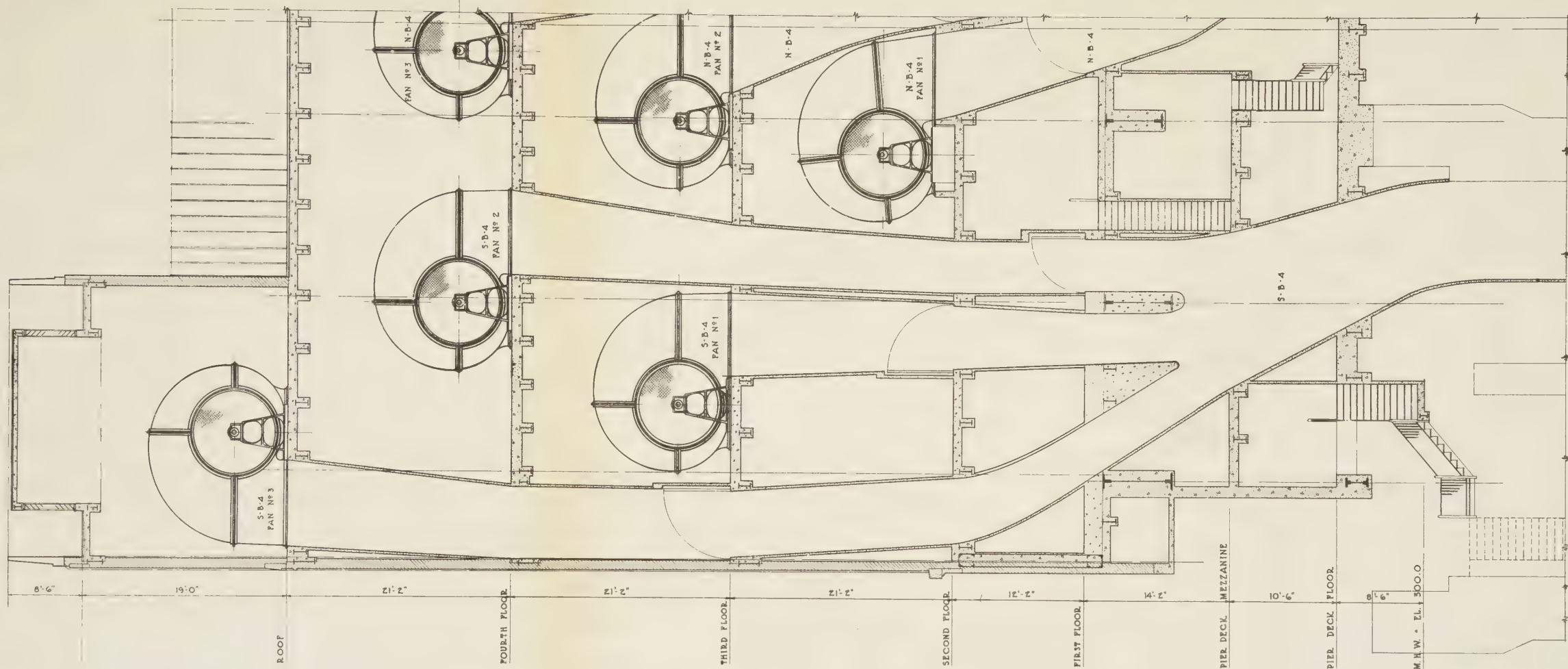
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 19

A. C. Willars
H. B. Stallwell } CONSULTANTS

SCALE: 0 1 2 3 4 5 FEET DATE JULY 7, 1928

DRAWN BY *Hyatt*
CHECKED BY *Swm.*
Ch. Singstad
CHIEF ENGINEER

FILE NO. 1-12



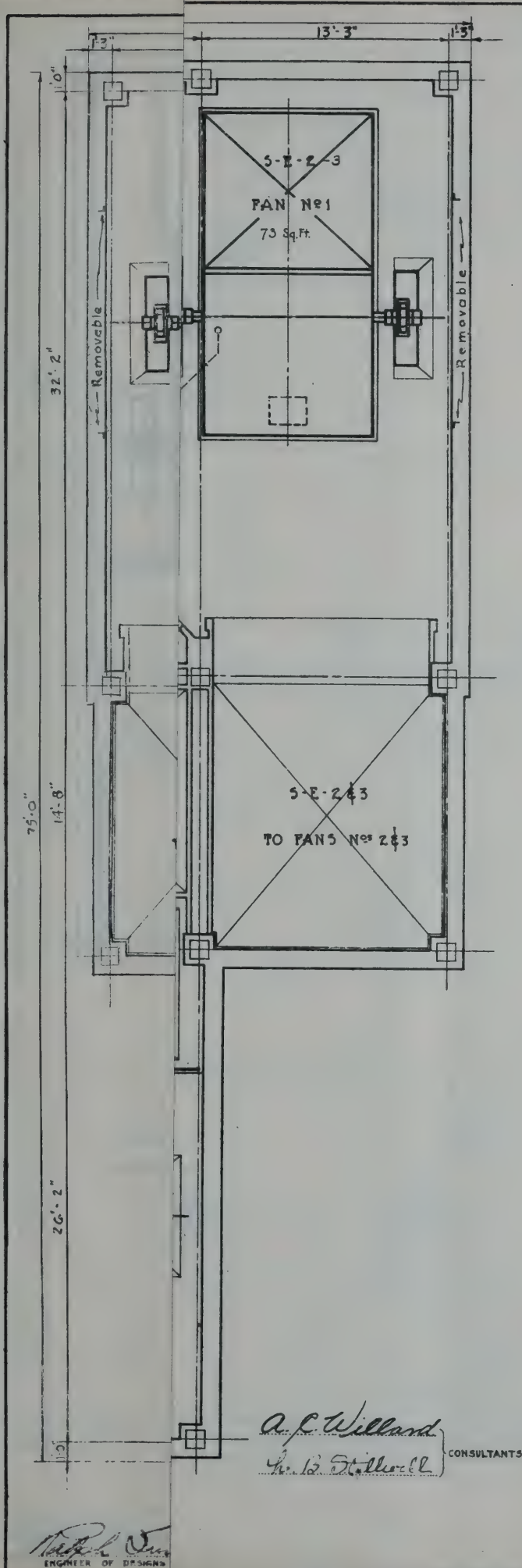
• SECTION A-A • SOUTH HALF •
 • RIVER VENTILATION BUILDING • N.J.

Adrian
 MECHANICAL ENGINEER
Robert Smith
 ELECTRICAL ENGINEER
 ENGINEER OF DESIGN

A. P. Williams
G. B. Stallwell
 CONSULTANTS

NEW YORK STATE
 BRIDGE & TUNNEL COMMISSION
 AND
 NEW JERSEY INTERSTATE
 BRIDGE & TUNNEL COMMISSION
 THE HOLLAND TUNNEL
 CONTRACT No. 12
 CONTRACT DRAWING No. 19

SCALE: 0 1 2 3 4 FEET
 DATE: JULY 7, 1928
 DRAWN BY: *W. H. H.*
 CHECKED BY: *W. H. H.*
 FILE NO. 1-12



NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 20

A. L. Willard
Per. B. Stillwell CONSULTANTS

SCALE: 0 1 2 3 4 5 FEET

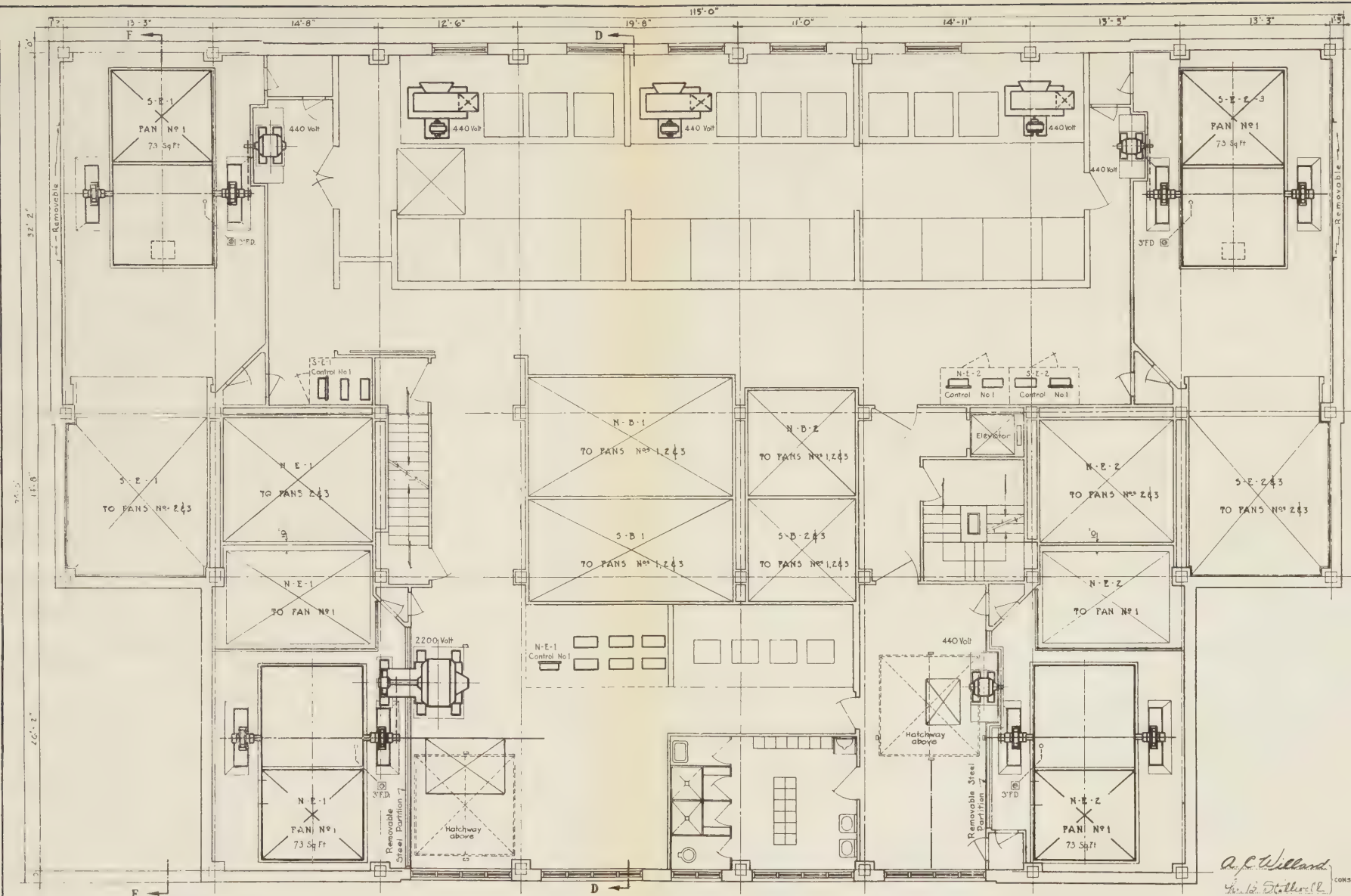
DATE JULY 2, 1925

DRAWN BY *W. M.*
CHECKED BY *W. M.*

Ole Singstad
CHIEF ENGINEER

FILE NO. 1-2

Robert L. Jones
ENGINEER OF DESIGN



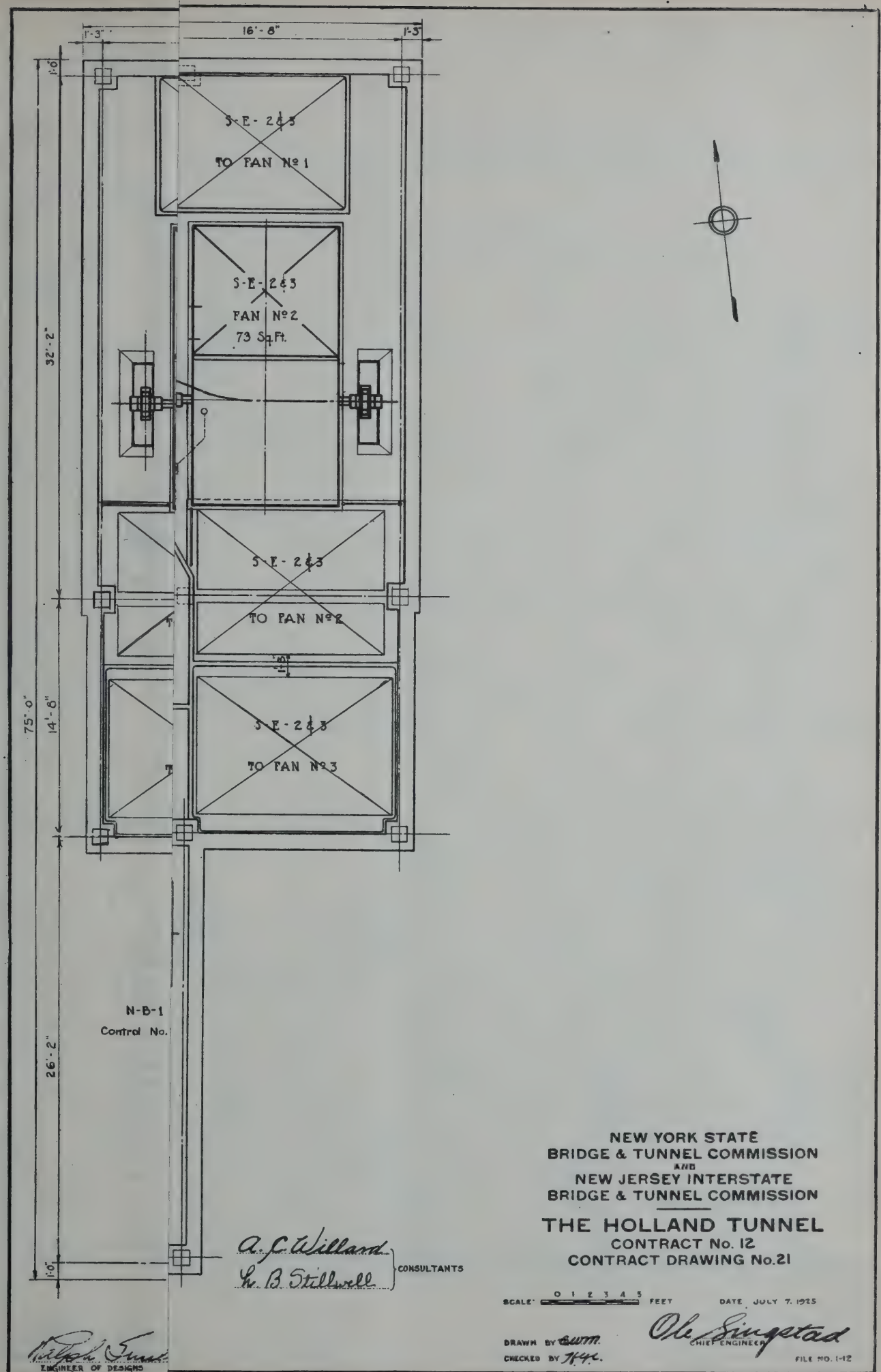
• FIRST FLOOR PLAN •
• LAND VENTILATION BUILDING • N.J. •

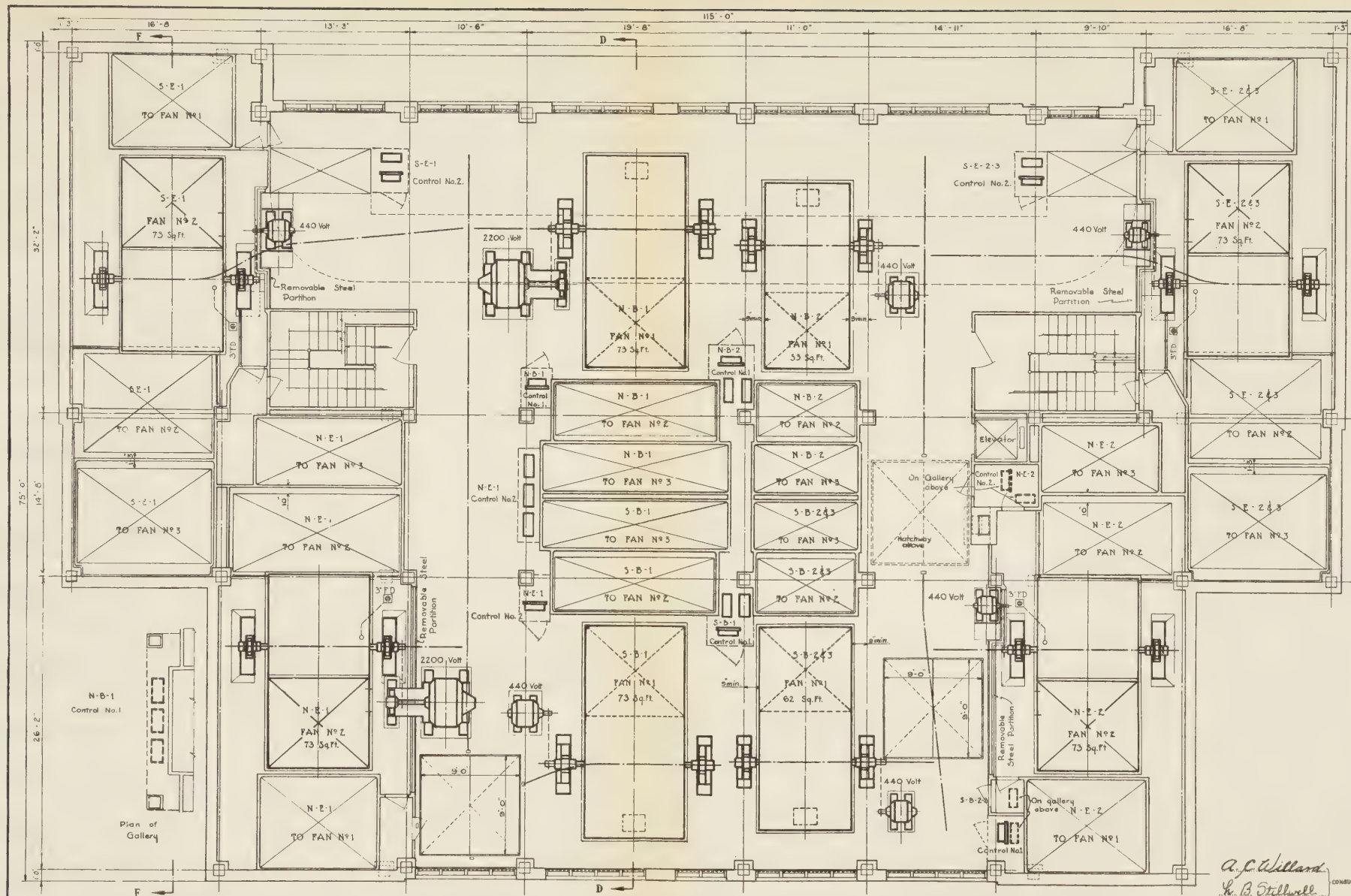
W. H. Brown
MECHANICAL ENGINEER
G. N. Smith
ELECTRICAL ENGINEER

A. C. Willard
Wm. H. Rothwell
CONSULTANTS

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 20

SCALE 0 1 2 3 4 5 FEET
DATE JULY 1915
DRAWN BY *W.H.M.*
CHECKED BY *W.H.C.*
Wm. H. Rothwell
CHIEF ENGINEER
FILE NO. 1-7





• SECOND FLOOR PLAN •
• LAND VENTILATION BUILDING • N.J. •

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT NO. 12
CONTRACT DRAWING NO. 21

A.C. Williams
S.B. Stillwell
CONSULTANTS

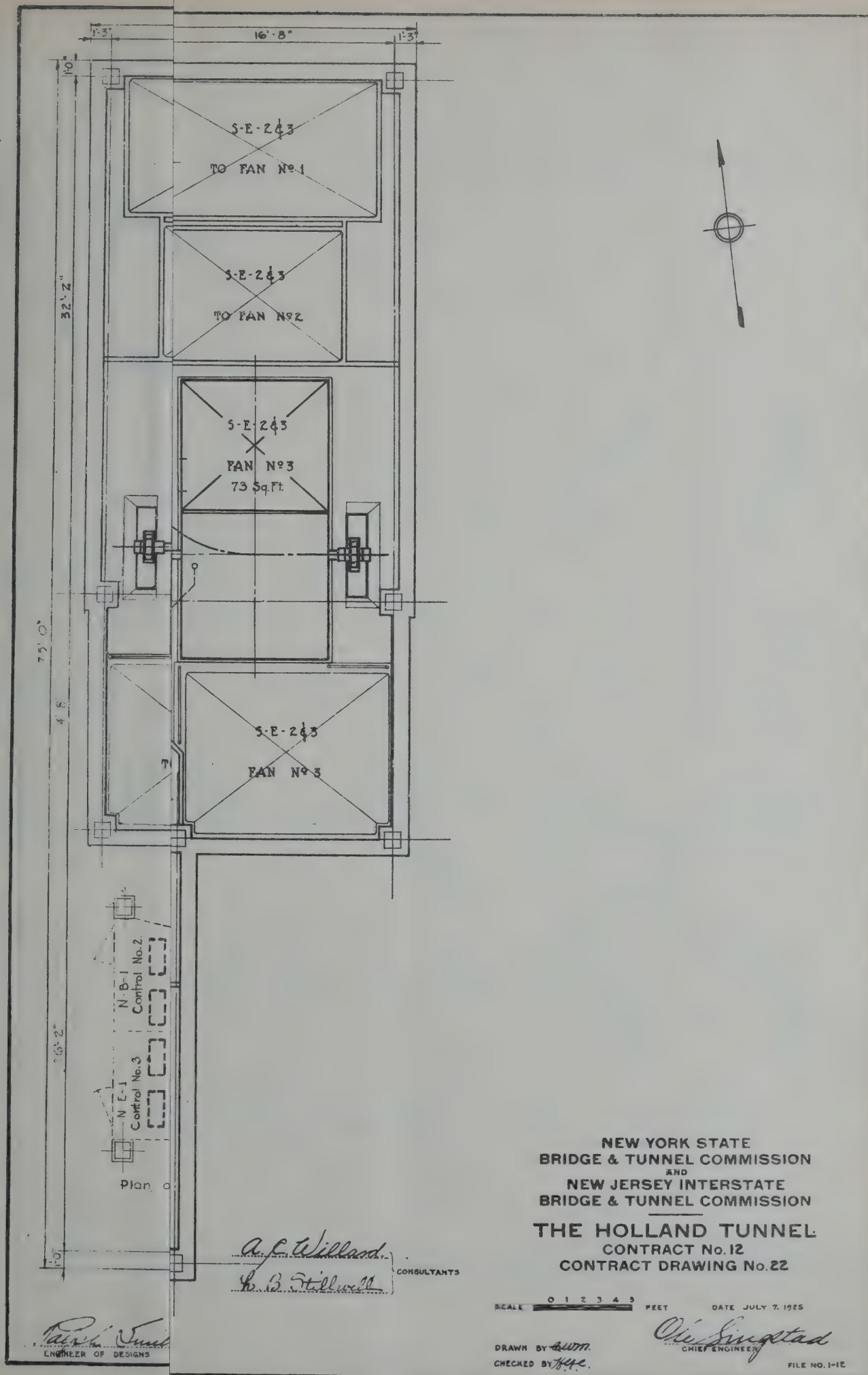
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DATE: JULY 7, 1915

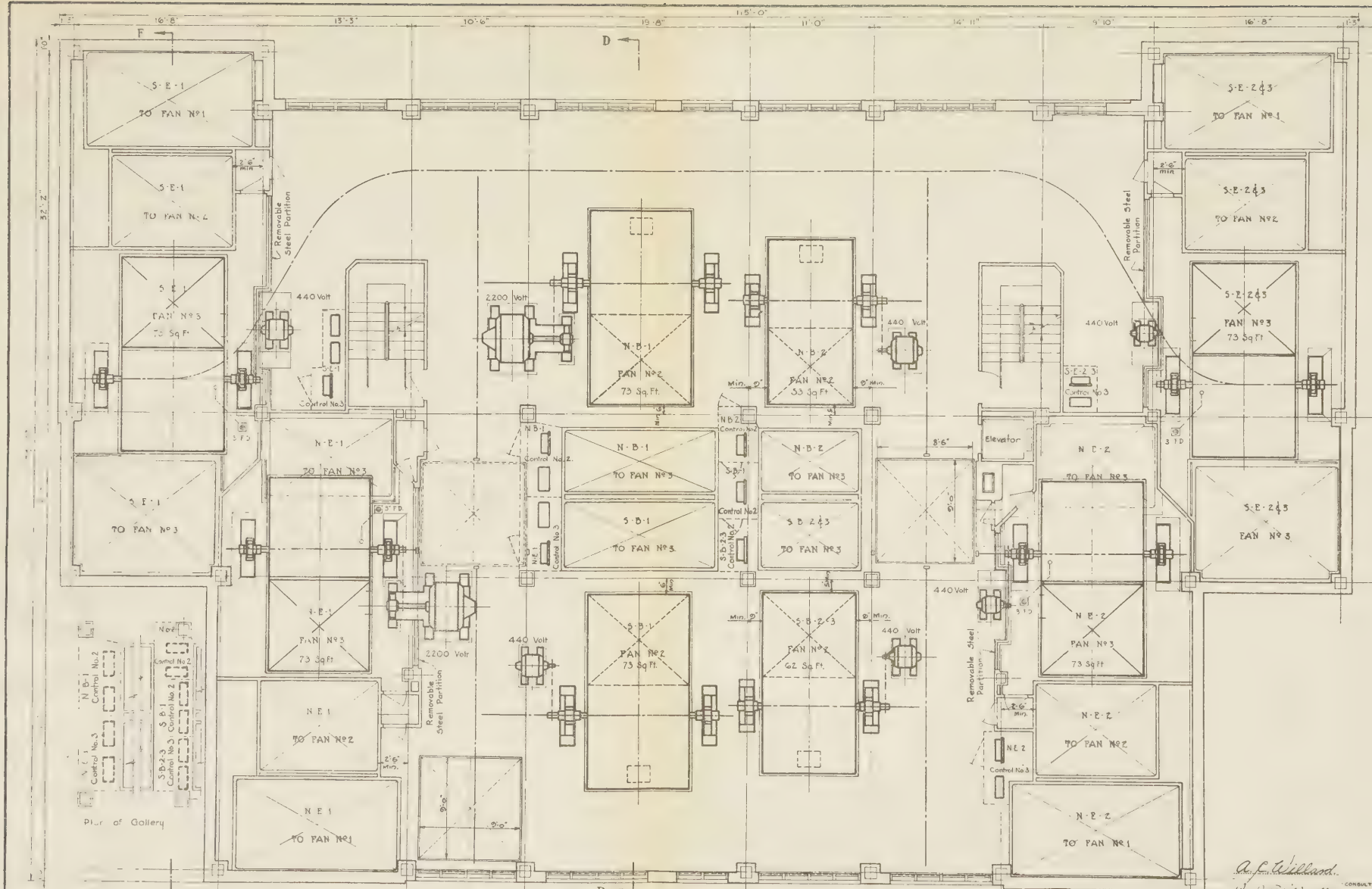
DRAWN BY: B.W.M.
CHECKED BY: H.C.

O.E. Singstad
CHIEF ENGINEER
FILE NO. 142

M.B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



NEW YORK STATE
 BRIDGE & TUNNEL COMMISSION
 AND
 NEW JERSEY INTERSTATE
 BRIDGE & TUNNEL COMMISSION
 THE HOLLAND TUNNEL
 CONTRACT No. 12
 CONTRACT DRAWING No. 22



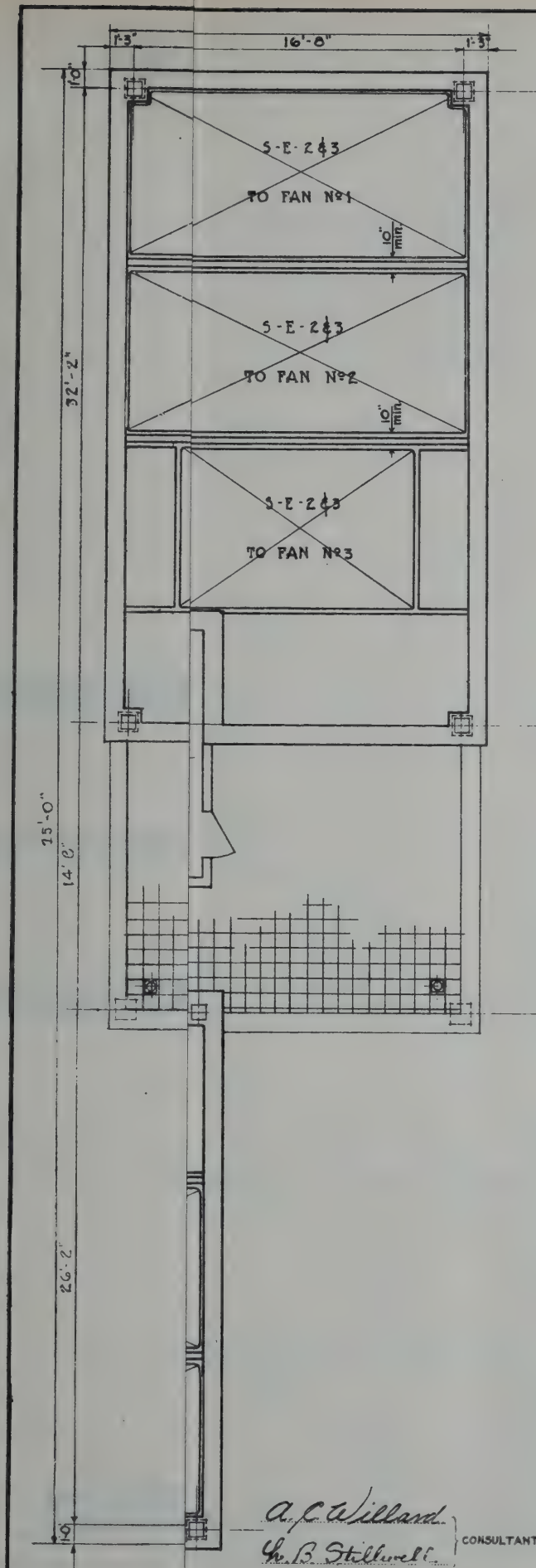
THIRD FLOOR PLAN
LAND VENTILATION BUILDING N.J.

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 22

Ref. Willard.
CONSULTANTS

SCALE 0 1 2 3 4 FEET DATE JULY 7, 1925

DRAWN BY *G.W.M.*
CHECKED BY *J.H.C.*
FILE NO. 1-12



NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 23

A. C. Willard
Ch. B. Stillwell
CONSULTANTS

SCALE: 0 1 2 3 4 5 FEET

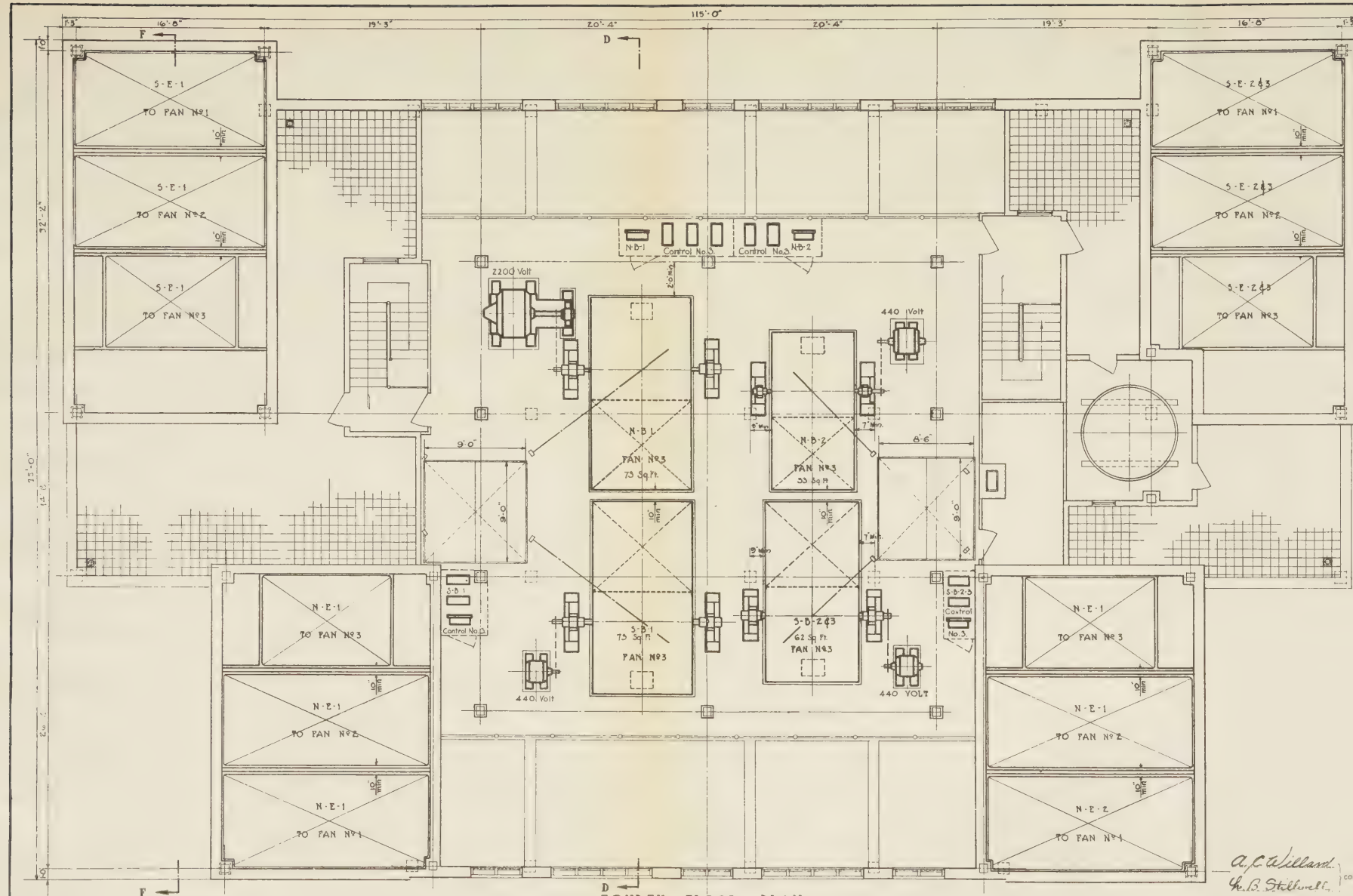
DATE JULY 7, 1925

DRAWN BY *SWM*
CHECKED BY *JH.C.*

Ch. B. Stillwell
CHIEF ENGINEER

FILE NO. 1-12

Robert Smith
ENGINEER OF DESIGNS



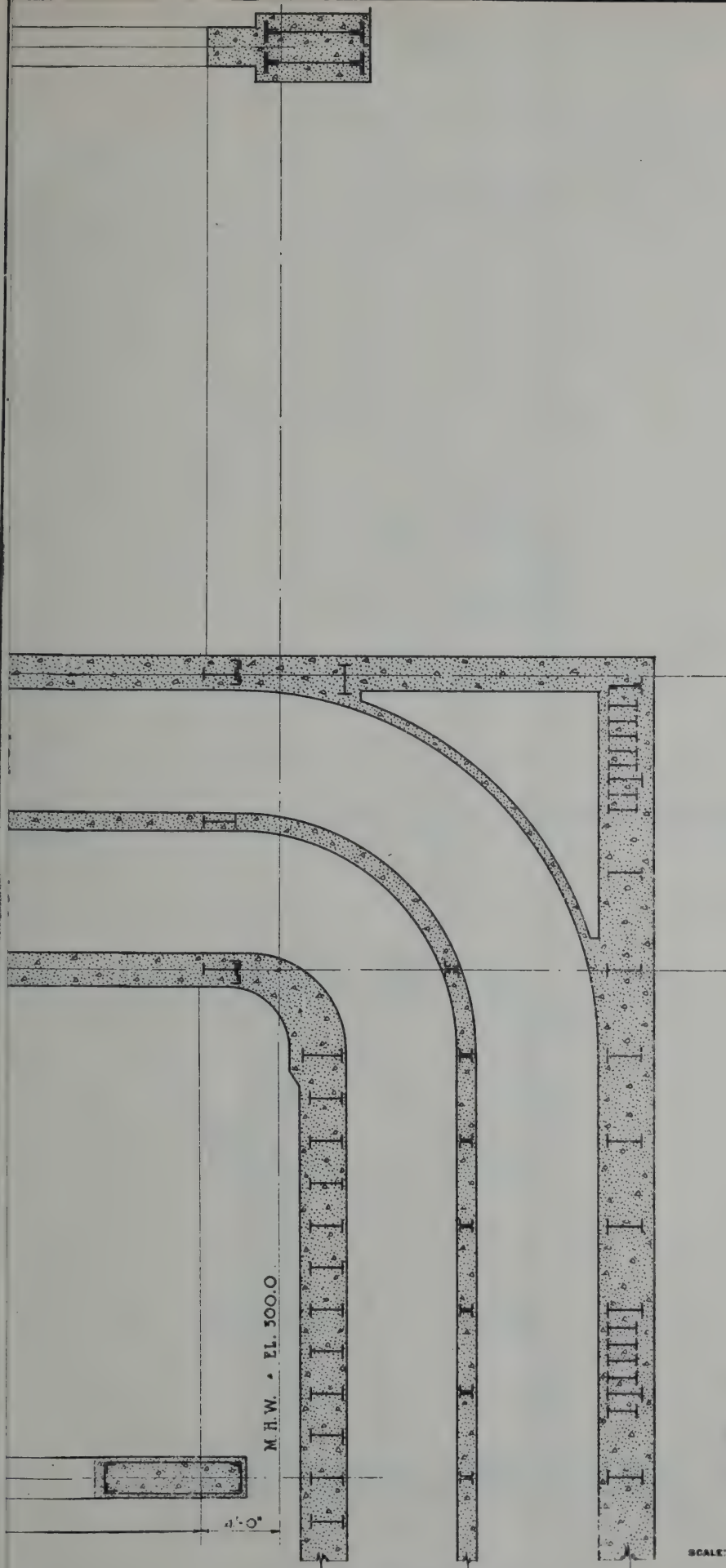
• FOURTH FLOOR PLAN •
• LAND VENTILATION BUILDING • N.J. •

Albanis
MECHANICAL ENGINEER
W. H. Wood
ELECTRICAL ENGINEER

A. C. Willard
H. B. Stillwell
CONSULTANTS

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 23

SCALE: 0 1 2 3 4 5 FEET
DATE: JULY 1, 1923
DRAWN BY: *W. H. Wood*
CHECKED BY: *H. B. Stillwell*
FILE NO. 1-12

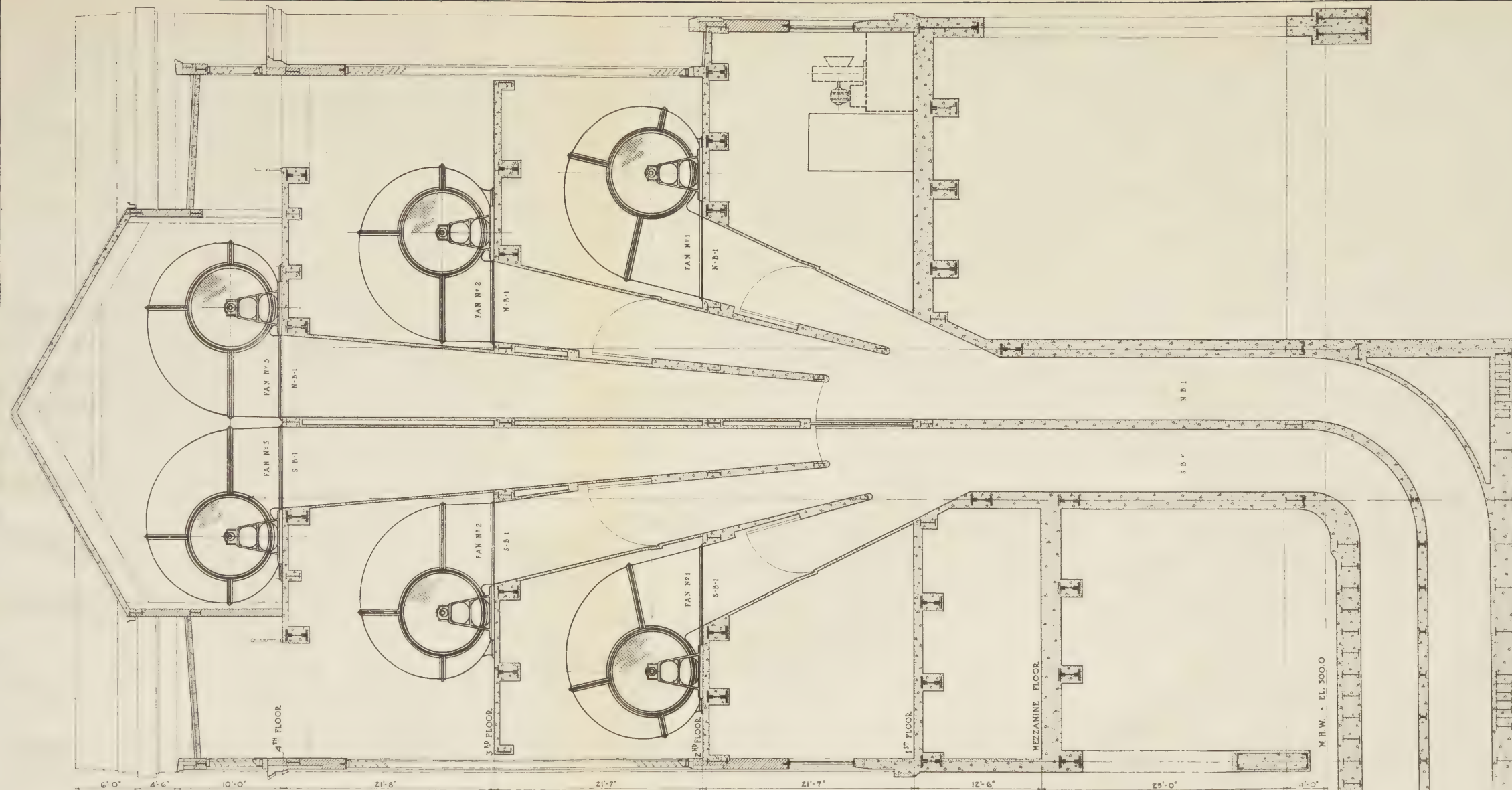


NEW YORK STATE
 BRIDGE & TUNNEL COMMISSION
 AND
 NEW JERSEY INTERSTATE
 BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
 CONTRACT No. 12
 CONTRACT DRAWING No. 24

SCALE: 0 1 2 3 4 5 FEET DATE JULY 7, 1925

A. C. Willard
H. B. Stillwell
 CONSULTANTS

DRAWN BY *sum*
 CHECKED BY *M.K.*
Ole Engstad
 CHIEF ENGINEER
 FILE NO. 1-12



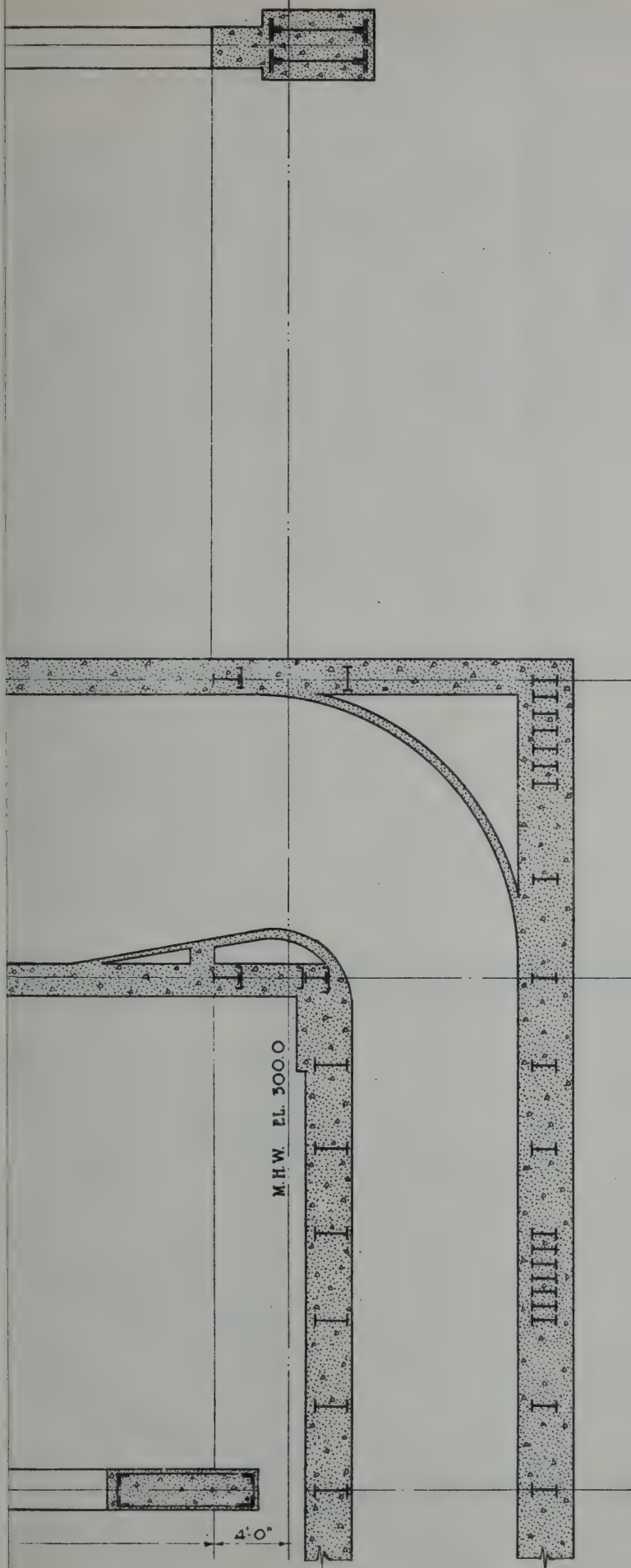
SECTION D-D
LAND VENTILATION BUILDING • N.J. •

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 24

SCALE: 1" = 4'-0" FEET DATE: JULY 7, 1928

DRAWN BY: *W. H. M.* CONSULTING
CHECKED BY: *H. B. Stillwell*
FILE NO. 1-12

Alban
MECHANICAL ENGINEER
J. N. Onda
ELECTRICAL ENGINEER



NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 25

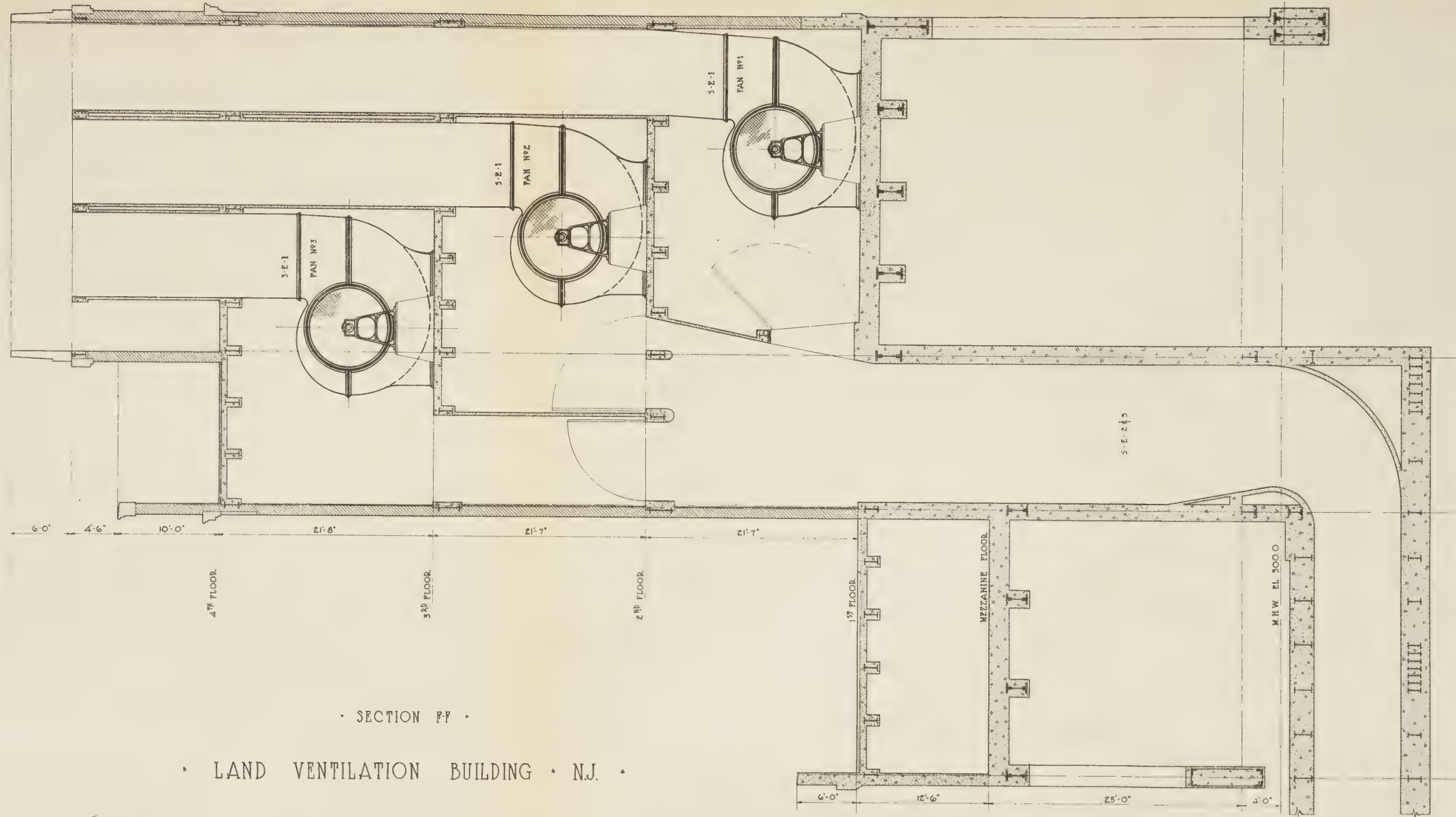
SCALE: 0 1 2 3 4 5 FEET DATE JULY 7, 1925

DRAWN BY *swm*
CHECKED BY *Kye*

Ch. Singstad
CHIEF ENGINEER

A. C. Willard
R. B. Stillwell } CONSULTANTS

FILE NO 1-12



• SECTION P-P •

• LAND VENTILATION BUILDING • N.J. •

W. J. Conner
ENGINEER OF DESIGN

W. J. Conner
MECHANICAL ENGINEER

W. J. Conner
ELECTRICAL ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION
THE HOLLAND TUNNEL
CONTRACT No. 12
CONTRACT DRAWING No. 25

SCALE: 0 1 2 3 4 5 FEET DATE, JULY 7, 1953

DRAWN BY *W. J. Conner* CHECKED BY *W. J. Conner*

CONSULTANTS
A. C. Willard
R. B. Stillwell

FILE NO. 1-12

UNIVERSITY OF ILLINOIS-URBANA



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